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Natural  
Resources  
Conservation  
Service

# Washington

## Water Supply Outlook Report

### March 1, 2006



# Water Supply Outlook Reports and Federal - State – Private Cooperative Snow Surveys

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## *How forecasts are made*

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

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# Washington Water Supply Outlook

March 2006

## General Outlook

Starting to feel like a yoyo yet? First we're down then we're up and now back down. Who ever invented the word "normal" didn't know a thing about weather and climate. February brought a mix bag of weather systems that boiled down to below average precipitation and snow fall for the month. Water year averages dropped slightly but with the surplus from January, we are holding fast with normal to slightly above normal conditions across the state. Fortunately we are forecasted to have a good chance of above average precipitation with below average temperatures over the next month. This will help build additional snowpack in the mountains as we progress toward the magical April 1 deadline for normal peak snowpack accumulation.

## Snowpack

The March 1 statewide SNOTEL readings were 121% of average. The Similkameen River Basin snow surveys reported the lowest readings at 79% of average. Readings in the Omak Creek area (near Omak) reported the highest at 154% of average. Westside averages from SNOTEL, and March 1 snow surveys, included the North Puget Sound river basins with 111% of average, the Central Puget river basins with 135%, and the Lewis-Cowlitz basins with 128% of average. Snowpack along the east slopes of the Cascade Mountains included the Yakima area with 125% and the Wenatchee area with 116%. Snowpack in the Spokane River Basin was at 105% and the Walla Walla River Basin had 107% of average. Maximum snow cover in Washington was at Paradise SNOTEL on Mt. Rainer, with water content of 66.6 inches. This site would normally have 59.7 inches of water content on March 1. Last year at this time Paradise had only 22 inches of snow water. The highest average in the state was at Meadows Pass SNOTEL with 182% of average.

BASIN	PERCENT OF LAST YEAR	PERCENT OF AVERAGE
Spokane .....	306 .....	99
Newman Lake .....	643 .....	111
Pend Oreille .....	224 .....	104
Okanogan .....	181 .....	108
Methow .....	302 .....	106
Conconully Lake .....	316 .....	135
Wenatchee .....	381 .....	110
Chelan .....	267 .....	103
Upper Yakima .....	656 .....	125
Lower Yakima .....	541 .....	124
Ahtanum Creek .....	414 .....	122
Walla Walla .....	390 .....	107
Lower Snake .....	239 .....	94
Cowlitz .....	485 .....	117
Lewis .....	619 .....	140
White .....	470 .....	122
Green .....	2768 .....	114
Puyallup .....	479 .....	122
Cedar .....	1946 .....	148
Snoqualmie .....	685 .....	132
Skykomish .....	480 .....	121
Skagit .....	410 .....	100
Baker .....	557 .....	117
Nooksack .....	495 .....	117
Olympic Peninsula .....	676 .....	91

## Precipitation

During the month of February, the National Weather Service and Natural Resources Conservation Service climate stations reported below average precipitation totals throughout all Washington river basins except the Colville and Okanogan areas which were both slightly above average. The highest percent of average in the state was at Winthrop which reported 128% of average. The wettest spot in the state was reported at Skookum Creek SNOTEL with a February accumulation of 13 inches, below the February normal of 15.72 inches. The driest area was the Olympic Peninsula with only 57% of average rainfall for February.

RIVER BASIN	FEBRUARY PERCENT OF AVERAGE	WATER YEAR PERCENT OF AVERAGE
Spokane .....	85 .....	105
Colville-Pend Oreille .....	93 .....	109
Okanogan-Methow .....	103 .....	122
Wenatchee-Chelan .....	78 .....	105
Upper Yakima .....	64 .....	103
Lower Yakima .....	75 .....	120
Walla Walla .....	72 .....	107
Lower Snake .....	69 .....	111
Cowlitz-Lewis .....	64 .....	107
White-Green-Puyallup .....	77 .....	112
Central Puget Sound .....	78 .....	109
North Puget Sound .....	85 .....	107
Olympic Peninsula .....	57 .....	107

## Reservoir

Seasonal reservoir levels in Washington vary greatly due to specific watershed management practices required in preparation for irrigation season, fisheries management, power generation, municipal demands and flood control. Reservoir storage in the Yakima Basin was 268,000-acre feet, 54% of average for the Upper Reaches and 141,000-acre feet, 102% of average for Rimrock and Bumping Lakes. Storage at the Okanogan reservoirs was 70% of average for March 1. The power generation reservoirs included the following: Coeur d'Alene Lake, 83,000 acre feet, 57% of average and 35% of capacity; Chelan Lake, 227,000-acre feet, 91% of average and 34% of capacity; and the Skagit River reservoirs at 93% of average and 56% of capacity.

BASIN	PERCENT OF CAPACITY	CURRENT STORAGE AS PERCENT OF AVERAGE
Spokane .....	35 .....	57
Colville-Pend Oreille .....	53 .....	107
Okanogan-Methow .....	51 .....	70
Wenatchee-Chelan .....	34 .....	91
Upper Yakima .....	32 .....	54
Lower Yakima .....	61 .....	102
Lower Snake .....	66 .....	102
Cowlitz-Lewis .....	N/A .....	N/A
North Puget Sound .....	56 .....	93



## Streamflow

March forecasts vary from 123% of average for Stemilt Creek near Wenatchee to 89% of average for Okanogan River. April-September forecasts for some Western Washington streams include the Cedar River near Cedar Falls, 115%; White River, 108%; and Skagit River, 105%. Some Eastern Washington streams include the Yakima River near Parker, 116%; Wenatchee River at Plain, 99%; and Spokane River near Post Falls, 90%. Volumetric forecasts are developed using current, historic and average snowpack, precipitation and streamflow data collected and coordinated by organizations cooperating with NRCS. Caution should be used when using early season forecasts for critical water resource management decisions.

Statewide February streamflows were near to below average due to the lack of precipitation and cool temperatures. The Grande Ronde at Troy had the lowest reported flows with 60% of average. The Dungeness River near Sequim with 104% of average was the highest in the state. Other streamflows were the following percentage of average as reported by the River Forecast Center: the Cowlitz at Castle Rock, 99%; the Okanogan near Tonasket, 95%; the Columbia below Rock Island Dam, 90%; and the Cle Elum near Roslyn, 60%.

BASIN	PERCENT OF AVERAGE (50 PERCENT CHANCE OF EXCEEDENCE)
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Spokane .....	90-103
Colville-Pend Oreille .....	95-117
Okanogan-Methow .....	89-117
Wenatchee-Chelan .....	98-123
Upper Yakima .....	108-115
Lower Yakima .....	110-116
Walla Walla .....	91-108
Lower Snake .....	104-108
Cowlitz-Lewis .....	98-106
White-Green-Puyallup .....	106-108
Central Puget Sound .....	112-121
North Puget Sound .....	105-110
Olympic Peninsula .....	100

STREAM	PERCENT OF AVERAGE FEBRUARY STREAMFLOWS
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Pend Oreille Below Box Canyon .....	92
Kettle at Laurier .....	96
Columbia at Birchbank .....	93
Spokane at Long Lake .....	78
Similkameen at Nighthawk .....	74
Okanogan at Tonasket .....	95
Methow at Pateros .....	77
Chelan at Chelan .....	85
Wenatchee at Pashastin .....	67
Yakima at Cle Elum .....	68
Yakima at Parker .....	72
Naches at Naches .....	80
Grande Ronde at Troy .....	60
Snake below Lower Granite Dam .....	79
SF Walla Walla near Milton Freewater .....	96
Columbia River at The Dalles .....	85
Lewis at Ariel .....	78
Cowlitz below Mayfield Dam .....	100
Skagit at Concrete .....	95
Dungeness near Sequim .....	105

*For more information contact your local Natural Resources Conservation Service office.*



# BASIN SUMMARY OF SNOW COURSE DATA

MARCH 2006

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00	SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
ABERDEEN LAKE CAN.	4000	3/01/06	22	5.3	4.1	5.7	GROUSE CAMP SNOTEL	5380	3/01/06	76	25.0	5.6	17.6
AHTANUM R.S.	3100	2/27/06	24	8.4	2.7	7.0	HAMILTON HILL CAN.	4550	2/25/06	31	8.3	4.0	12.7
ALPINE MEADOWS	3500	3/01/06	98	43.0	8.0	33.8	HAND CREEK SNOTEL	5030	3/01/06	37	10.3	1.8	9.9
ALPINE MEADOWS SNTL	3500	3/01/06	102	50.9	12.8	36.5	HARTS PASS SNOTEL	6500	3/01/06	105	37.4	14.0	39.7
AMBROSE	6480	2/23/06	34	8.3	4.0	10.5	HELL ROARING DIVIDE	5770	2/28/06	91	31.1	15.1	25.8
ASHLEY DIVIDE	4820	2/28/06	20	5.3	.6	6.2	HERRIG JUNCTION	4850	3/03/06	81	27.8	15.6	22.2
BADGER PASS SNOTEL	6900	3/01/06	82	27.8	13.2	29.7	HIGH RIDGE SNOTEL	4920	3/01/06	76	24.2	6.6	21.2
BAIRD #2	3220	2/27/06	29	8.0	5.0	--	HOLBROOK	4530	3/02/06	30	9.3E	2.4	8.3
BAREE MIDWAY	4600	2/27/06	85	30.7	5.0	28.7	HOODOO BASIN SNOTEL	6050	3/01/06	124	41.0	18.7	38.6
BAREE TRAIL	3800	2/27/06	42	12.8	.0	8.2	HUCKLEBERRY SNOTEL	2000	3/01/06	4	1.7	.0	--
BARKER LAKES SNOTEL	8250	3/01/06	45	11.0	6.6	11.1	HUMBOLDT GLCH SNOTEL	4250	3/01/06	---	9.8	1.7	11.7
BARNES CREEK CAN.	5320	3/03/06	52	15.6	17.2	17.3	HURRICANE	4500	3/01/06	---	9.5E	1.2	15.6
BASIN CREEK SNOTEL	7180	3/01/06	26	6.6	3.1	6.1	INTERGAARD	6450	2/24/06	17	4.6	1.6	6.2
BASSOO PEAK	5150	2/23/06	36	8.7	2.9	9.0	IRENE'S CAMP	5530	2/27/06	44	12.2	3.3	--
BEAVER CREEK TRAIL	2200	3/03/06	42	16.0	.0	13.0	ISINTOK LAKE CAN.	5100	2/27/06	24	5.4	3.4	6.5
BEAVER PASS	3680	3/03/06	86	29.3	4.0	24.9	JUNE LAKE SNOTEL	3200	3/01/06	103	48.1	9.6	33.9
BEAVER PASS SNOTEL	3680	3/01/06	109	40.8	10.7	--	KELLOGG PEAK	5560	3/05/06	79	30.6	7.8	25.8
BERNE-MILL CREEK (d)	3170	2/26/06	90	26.3	8.2	25.3	KISHENEEN	3890	2/26/06	44	8.4	2.9	7.3
BIG WHITE MTN CAN.	5510	3/01/06	63	20.3	13.4	16.8	KIT CARSON PASTURE	4950	2/27/06	26	7.4	3.7	8.2
BLACK MOUNTAIN	7750	2/28/06	39	11.7	9.4	11.4	KLESILKWA CAN.	3450	2/24/06	42	9.5	.6	10.5
BLACK PINE SNOTEL	7100	3/01/06	32	8.9	4.6	10.1	KRAFT CREEK SNOTEL	4750	3/01/06	41	12.0	4.4	13.6
BLACKWALL PEAK CAN.	6370	3/01/06	---	26.9	--	30.0	LESTER CREEK	3100	2/24/06	71	22.6	.0	17.2
BLEWETT PASS#2SNOTEL	4270	3/01/06	53	16.9	1.2	15.7	LIGHTNING LAKE CAN.	3700	2/26/06	45	13.1	1.4	10.3
BLUE LAKE	5900	2/25/06	68	18.2	7.6	21.1	LOGAN CREEK	4300	2/27/06	29	7.4	3.4	6.2
BRENDA MINE CAN.	4450	3/01/06	---	13.4	9.2	11.3	LOLO PASS SNOTEL	5240	3/01/06	90	29.3	11.4	26.8
BRIEF	1600	2/27/06	24	8.0	3.9	6.9	LONE PINE SNOTEL	3800	3/01/06	---	40.7	9.0	31.7
BROOKMERE CAN.	3000	2/26/06	31	7.2	3.2	7.6	LOOKOUT SNOTEL	5140	3/01/06	77	25.8	9.3	27.2
BROWN TOP AM	6000	3/03/06	156	53.0E	16.6	53.4	LOST HORSE MTN CAN.	6300	3/05/06	27	6.7	4.4	8.0
BRUSH CREEK TIMBER	5000	2/22/06	24	6.3	.2	7.5	LOST HORSE SNOTEL	5000	3/01/06	59	20.4	3.9	18.3
BULL MOUNTAIN	6600	2/24/06	25	6.2	.1	5.1	LOST LAKE SNOTEL	6110	3/01/06	---	45.9	23.9	50.7
BUMPING LAKE (NEW)	3400	3/01/06	64	22.2	3.2	16.9	LOUP LOUP CAMPGROUND	2/27/06	43	13.7	3.1	--	
BUMPING RIDGE SNOTEL	4600	3/01/06	96	32.8	2.6	24.9	LOWER SANDS CREEK #2	3120	3/01/06	54	19.1	5.2	16.6
BUNCHGRASS MDWSNOTEL	5000	3/01/06	94	30.5	14.7	24.4	LUBRECHT FOREST NO 3	5450	3/01/06	16	4.0	.9	5.6
BURNT MOUNTAIN PIL	4200	3/01/06	44	14.0	1.2	--	LUBRECHT FOREST NO 4	4650	3/01/06	7	2.4	.1	2.7
BUTTERMILK BUTTE	2/24/06	54	15.4	--	--	--	LUBRECHT FOREST NO 6	4040	3/01/06	11	3.3	.4	3.2
CARMI CAN.	4100	2/27/06	23	5.5	3.5	5.8	LUBRECHT HYDROPLT	4200	3/01/06	21	5.0	2.5	5.1
CAYUSE PASS	5300	3/01/06	---	77.1e	--	64.8	LUBRECHT SNOTEL	4680	3/01/06	13	4.4	1.7	5.3
CHESSMAN RESERVOIR	6200	2/27/06	6	1.5	.8	3.1	LYMAN LAKE SNOTEL	5900	3/01/06	164	56.0	25.6	55.1
CHEWALAH #2	4930	2/27/06	67	23.2	7.2	--	LYNN LAKE	4000	2/24/06	66	21.7	.0	16.1
CHICKEN CREEK	4060	2/27/06	60	17.4	8.3	14.4	MARIAS PASS	5250	2/28/06	47	14.8	3.6	14.9
CHIAWAUKUM G.S.	2500	2/26/06	36	8.6	4.1	10.8	MCCULLOCH CAN.	4200	2/28/06	29	6.8	4.6	6.2
CITY CABIN	2390	3/01/06	24	9.0	.0	10.2	MEADOWS CABIN	1900	3/03/06	8	2.3	.0	5.5
COLD CREEK STRIP	6020	2/27/06	40	9.4	3.9	--	MEADOWS PASS SNOTEL	3240	3/01/06	88	36.0	1.4	19.8
COMBINATION SNOTEL	5600	3/01/06	12	4.1	1.5	4.5	MERRITT	2140	2/26/06	31	10.1	1.6	14.2
COPPER BOTTOM SNOTEL	5200	3/01/06	28	8.3	.0	9.9	M F NOOKSACK SNOTEL	4980	3/01/06	125	48.6	11.5	--
COPPER CAMP	6950	2/25/06	80	25.2	--	--	MICA CREEK SNOTEL	4750	3/01/06	67	20.2	8.2	23.2
COPPER CREEK	5700	2/25/06	38	9.6	.2	12.5	MINERAL CREEK	4000	2/27/06	58	17.3	5.0	15.8
COPPER MOUNTAIN	7700	2/25/06	35	9.8	5.9	8.9	MINERS RIDGE SNOTEL	6200	3/01/06	---	46.5	19.0	45.2
CORNER CREEK	3150	3/02/06	19	6.7	.0	6.7	MISSEZULA MTN CAN.	5080	2/26/06	26	6.7	3.3	8.4
CORRAL PASS SNOTEL	6000	3/01/06	---	33.7	8.5	29.5	MISSION CREEK CAN.	5840	3/01/06	---	15.7	17.4	17.1
COTTONWOOD CREEK	6400	2/28/06	21	5.8	3.0	6.0	MISSION RIDGE	5000	2/24/06	57	19.1	3.5	15.2
COUGAR MTN. SNOTEL	3200	3/01/06	62	19.7	.0	17.1	MONASHEE PASS CAN.	4500	3/03/06	36	10.2	10.1	11.8
COX VALLEY	4500	3/03/06	93	33.4	2.6	31.7	MORRISSEY RIDGE CAN.	6100	3/01/06	---	24.8	--	24.1
COYOTE HILL	4200	2/28/06	30	9.7	4.6	9.1	MORSE LAKE SNOTEL	5400	3/01/06	158	61.9	12.2	47.0
DAILY CREEK SNOTEL	5780	3/01/06	33	9.1	6.2	9.4	MOSES MTN SNOTEL	4800	3/01/06	65	20.7	4.2	13.4
DEER PARK	5200	2/27/06	33	10.7	.8	15.1	MOSQUITO RDG SNOTEL	5200	3/01/06	---	32.4	16.0	31.1
DESERT MOUNTAIN	5600	2/24/06	51	12.5	7.1	12.6	MOULTON RESERVOIR	6850	2/28/06	30	7.6	2.3	6.2
DEVILS PARK	5900	3/02/06	113	37.3	12.4	37.9	MOUNT CRAG SNOTEL	4050	3/01/06	78	27.6	10.1	26.8
DISCOVERY BASIN	7050	2/23/06	29	6.3	3.5	8.4	MT. KOBAY CAN.	5500	2/26/06	41	12.4	6.1	10.2
DIX HILL	6400	2/26/06	33	9.5	4.1	10.0	MOWICH SNOTEL	3150	3/01/06	8	1.9	.0	--
DOMMERIE FLATS	2200	3/01/06	18	8.0	.0	7.2	MOUNT GARDNER	3300	3/01/06	52	21.0	.0	13.0
DUNCAN RIDGE	5370	2/27/06	32	8.0	2.2	--	MOUNT GARDNER SNOTEL	2860	3/01/06	57	20.4	.0	14.1
DUNGENESS SNOTEL	4100	3/01/06	24	7.5	.0	--	MUTTON CREEK #1	5700	2/23/06	54	16.4	4.1	12.0
EAST FORK R.S.	5400	2/24/06	27	5.9	2.6	5.6	N.F. ELK CR SNOTEL	6250	3/01/06	35	9.4	5.8	10.2
EASY PASS AM	5200	3/01/06	---	73.2e	15.3	65.1	NEVADA RIDGE SNOTEL	7020	3/01/06	46	13.2	6.8	13.2
EL DORADO MINE	7800	2/25/06	32	9.2	7.8	15.8	NEW HOZOMEEN LAKE	2800	3/02/06	31	10.2	.0	10.3
ELBOW LAKE SNOTEL	3200	3/01/06	98	39.5	4.8	34.3	NEZ PERCE CMP SNOTEL	5650	3/01/06	49	14.0	6.2	12.7
EMERY CREEK SNOTEL	4350	3/01/06	50	13.6	5.8	13.3	NEZ PERCE PASS	6570	2/27/06	46	14.2	5.3	15.7
ENDERBY CAN.	5800	3/04/06	106	39.4	24.4	33.8	NOISY BASIN SNOTEL	6040	3/01/06	124	41.7	20.4	33.8
ESPERON CK. UP CAN.	5050	2/26/06	41	14.8	10.2	14.6	NORTH FORK JOCKO	6330	3/02/06	106	41.4	24.6	--
FARRON CAN.	4000	3/01/06	46	13.5	8.1	11.3	OLALLIE MDWS SNOTEL	3960	3/01/06	145	59.4	7.1	48.9
FATTY CREEK	5500	3/02/06	66	22.9	9.2	20.4	OLALLIE MEADOWS	3630	3/01/06	---	54.0e	5.5	36.7
FISH CREEK	8000	2/28/06	28	6.6	3.1	7.8	OPHIR PARK	7150	2/26/06	42	13.0	5.7	14.1
FISH LAKE	3370	3/01/06	105	40.9	9.6	29.9	OYAMA LAKE CAN.	4100	2/27/06	23	6.1	4.5	6.2
FISH LAKE SNOTEL	3370	3/01/06	100	35.3	7.9	30.6	PARADISE PARK SNOTEL	5500	3/01/06	---	66.6	21.9	59.7
FLATTOP MTN SNOTEL	6300	3/01/06	140	43.9	24.								

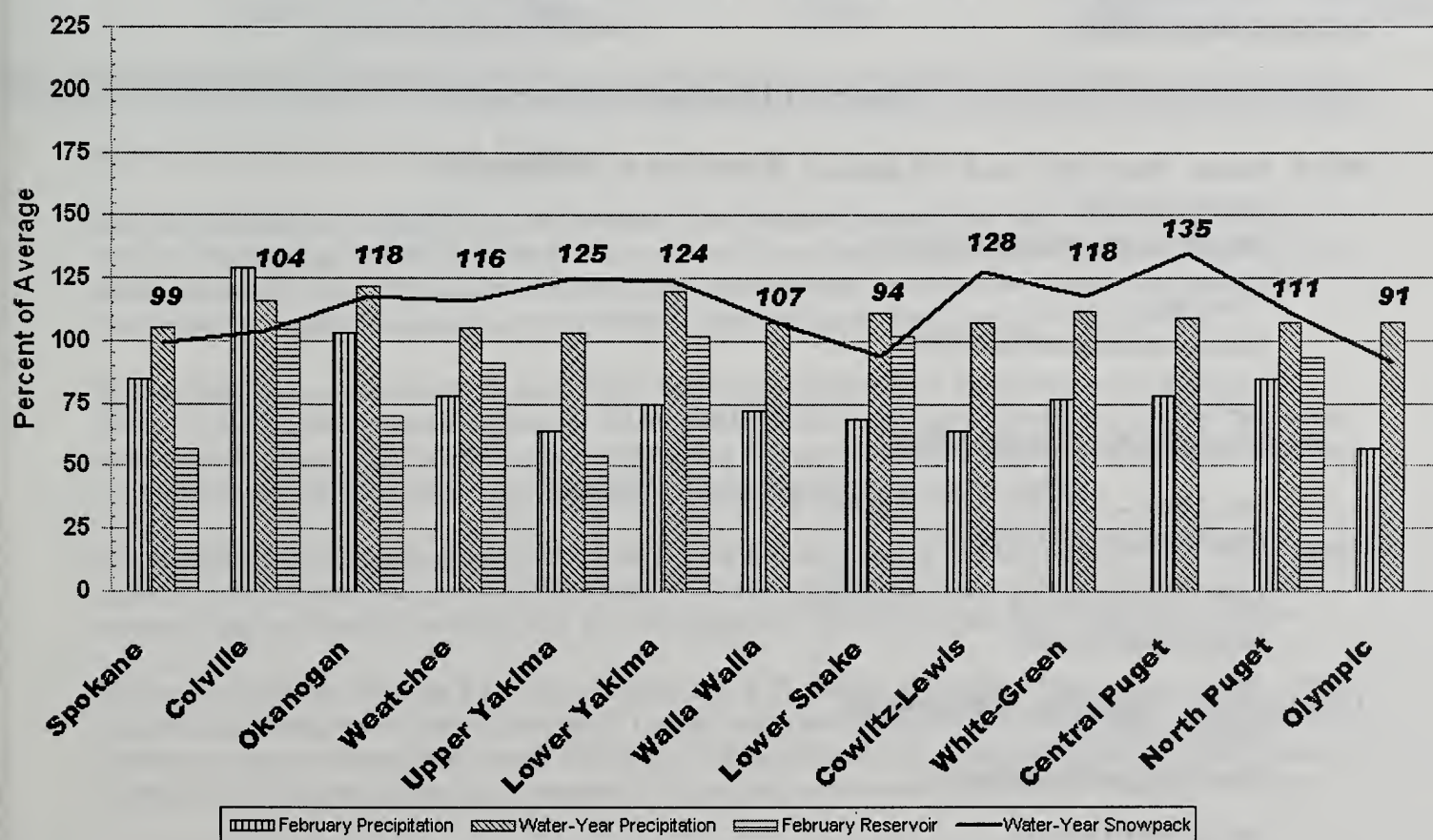


SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
ROCKY CREEK AM	2100	3/01/06	---	29.8e	.0	26.5
ROLAND SUMMIT	5120	3/01/06	95	31.8	11.3	29.2
ROUND TOP MTN	4020	2/24/06	39	12.3	.0	--
RUSTY CREEK	4000	2/23/06	35	9.3	3.3	6.2
SADDLE MTN SNOTEL	7900	3/01/06	81	23.9	11.6	21.8
SAGE CREEK SADDLE	4080	3/02/06	53	17.0	.0	15.5
SALMON MDWS SNOTEL	4500	3/01/06	50	12.5	4.7	10.1
SASSE RIDGE SNOTEL	4200	3/01/06	111	34.9	9.0	30.3
SATUS PASS	4030	2/28/06	49	15.5	4.2	9.6
SAVAGE PASS SNOTEL	6170	3/01/06	69	22.7	11.3	22.5
SAWMILL RIDGE	4700	2/24/06	89	27.5	1.1	28.6
SCHREIBERS MDW AM	3400	2/27/06	138	54.6	13.0	43.5
SENTINEL BT SNOTEL	4920	3/01/06	39	9.6	4.2	--
SHEEP CANYON SNOTEL	4050	3/01/06	90	33.9	4.0	31.6
SHELL ROCK	4500	2/24/06	31	8.8	.0	--
SHERWIN SNOTEL	3200	3/01/06	---	8.9	2.8	10.8
SILVER STAR MTN CAN.	5600	2/26/06	74	26.9	22.2	25.0
SKALKAH SNOTEL	7260	3/01/06	68	21.3	9.4	20.2
SKITWISH RIDGE	5110	3/01/06	83	29.1	9.0	27.2
SKOOKUM CREEK SNOTEL	3920	3/01/06	67	30.7	2.7	18.9
SLIDE ROCK MOUNTAIN	7100	2/24/06	36	11.3	5.4	12.6
SOUDDOUGH GULCH SNTL	4000	3/01/06	1	.4	.0	--
SPENCER MDW SNOTEL	3400	3/01/06	---	36.2	4.4	28.6
SPIRIT LAKE SNOTEL	3100	3/01/06	19	5.6	.0	--
SPOTTED BEAR MTN.	7000	2/24/06	42	11.0	4.6	12.7
SPRUCE SPRINGS SNTL	5700	3/01/06	51	17.6	1.7	--
STARVATION MOUNTAIN	6750	2/27/06	63	22.4	5.8	16.6
STAHL PEAK SNOTEL	6030	3/01/06	108	34.2	22.0	29.9
STAMPEDE PASS SNOTEL	3860	3/01/06	117	44.4	5.1	39.8
STEMPLE PASS	6600	2/27/06	35	8.2	3.2	8.3
STEVENS PASS SNOTEL	4070	3/01/06	130	42.4	10.4	38.3
STEVENS PASS SAND SD	3700	2/26/06	102	32.6	4.0	30.6

SNOW COURSE	ELEVATION	DATE	SNOW DEPTH	WATER CONTENT	LAST YEAR	AVERAGE 1971-00
STORM LAKE	7780	2/23/06	40	10.8	6.2	10.2
STRYKER BASIN	6180	3/03/06	96	35.5	17.1	26.9
SUMMERLAND RES CAN.	4200	2/28/06	33	8.8	5.4	8.4
SUNSET SNOTEL	5540	3/01/06	---	15.7	9.1	26.0
SURPRISE LKS SNOTEL	4250	3/01/06	---	62.6	7.3	40.1
SWAMP CREEK SNOTEL	4000	3/01/06	58	17.2	3.2	--
TEN MILE LOWER	6600	2/27/06	25	6.4	2.4	5.9
TEN MILE MIDDLE	6800	2/27/06	34	8.7	4.0	8.9
THUNDER BASIN SNOTEL	4200	3/01/06	---	30.0	9.1	29.7
THUNDER BASIN	4200	3/01/06	---	18.7e	4.5	19.0
THOMPSON CREEK	2500	2/24/06	9	3.0	.0	--
THOMPSON RIDGE	2240	2/24/06	48	13.9	--	--
TINKHAM CREEK SNOTEL	3000	3/01/06	90	32.5	4.5	26.7
TOUCHET SNOTEL	5530	3/01/06	86	28.9	7.0	28.5
TRINKUS LAKE	6100	2/24/06	108	36.7	20.0	36.4
TROUGH #2 SNOTEL	5310	3/01/06	41	12.3	.6	9.3
TROUT CREEK CAN.	5650	2/26/06	24	4.4	4.3	6.7
TRUMAN CREEK	4060	3/02/06	15	4.3	1.4	4.4
TUNNEL AVENUE	2450	3/02/06	64	25.4	1.5	18.6
TV MOUNTAIN	6800	3/02/06	52	17.6	7.9	15.2
TWELVEMILE SNOTEL	5600	3/01/06	61	19.2	7.3	16.0
TWIN CAMP	4100	2/24/06	71	24.0	.0	21.5
TWIN CREEKS	3580	2/24/06	40	9.7	2.2	10.2
TWIN LAKES SNOTEL	6400	3/01/06	115	42.5	18.5	34.7
UPPER HOLLAND LAKE	6200	2/25/06	89	27.4	15.5	30.0
UPPER WHEELER SNOTEL	4400	3/01/06	46	14.5	5.9	11.7
VASEUX CREEK CAN.	4250	3/03/06	19	3.5	2.0	5.5
WARM SPRINGS SNOTEL	7800	3/01/06	60	17.6	9.1	17.0
WATERHOLE SNOTEL	5000	3/01/06	85	30.9	3.0	--
WEASEL DIVIDE	5450	2/28/06	92	32.2	19.9	28.7
WELLS CREEK SNOTEL	4200	3/01/06	96	32.8	9.8	27.3
WHITE PASS ES SNOTEL	4500	3/01/06	71	24.2	2.8	21.8
WHITE ROCKS MTN CAN.	7200	3/04/06	71	24.0	12.9	19.6

NRCS Natural Resources  
Conservation Service

# March 1, 2006 - Snowpack, Precipitation and Reservoir Conditions at a Glance (Water Year = October 1, 2005 - Current Date)





Natural Resources Conservation Service  
Washington State  
Snow, Water and Climate Services

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### Helpful Internet Addresses

#### NRCS Snow Survey and Climate Services Homepages

Washington:  
<http://www.wa.nrcs.usda.gov/snow>

Oregon:  
<http://www.or.nrcs.usda.gov/snow>

Idaho:  
<http://www.id.nrcs.usda.gov/snow>

National Water and Climate Center (NWCC):  
<http://www.wcc.nrcs.usda.gov>

NWCC Anonymous FTP Server:  
<ftp.wcc.nrcs.usda.gov>

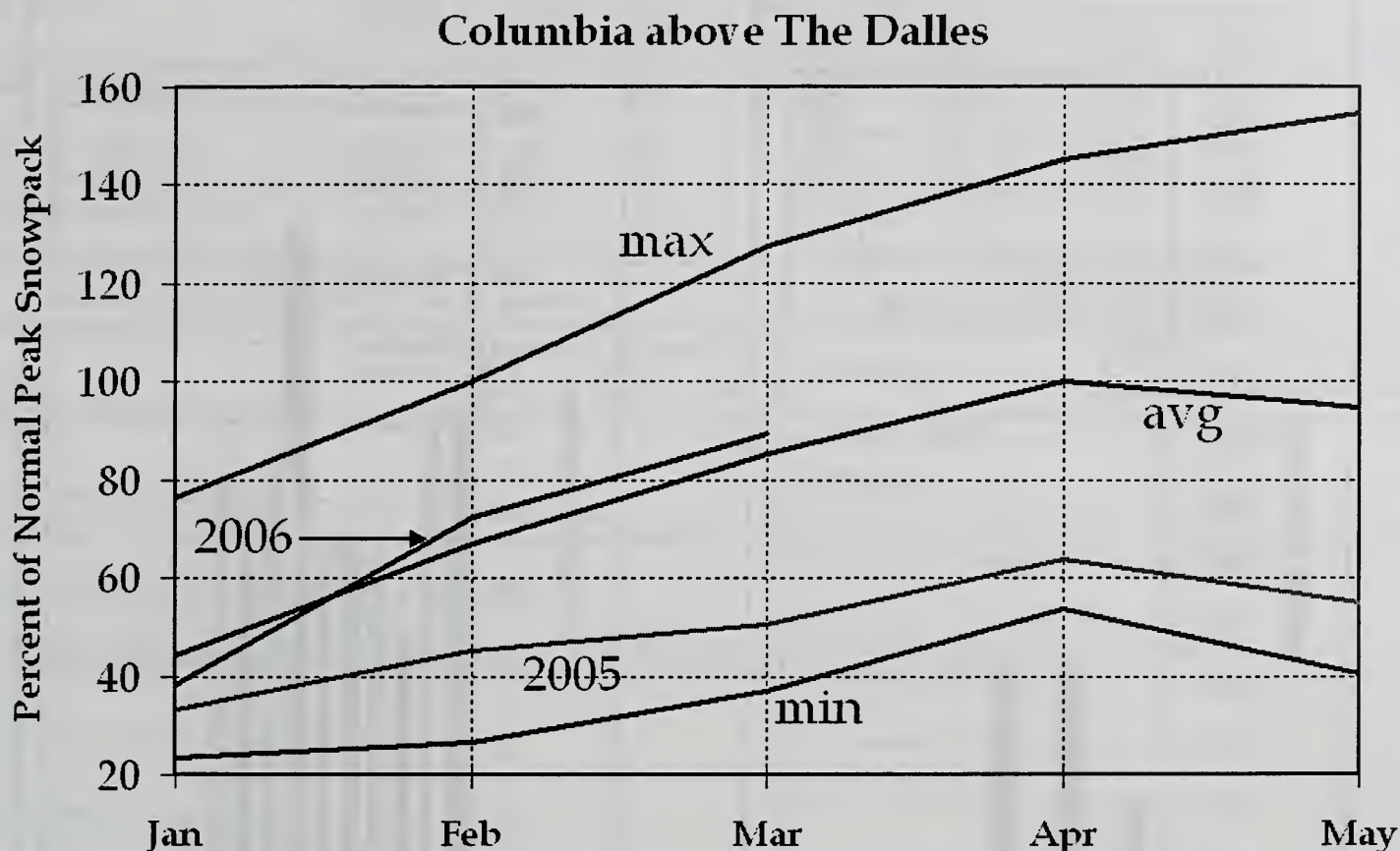
#### USDA-NRCS Agency Homepages

Washington:  
<http://www.wa.nrcs.usda.gov>

NRCS National:  
<http://www.nrcs.usda.gov>



# Columbia Basin Snowpack Summary



Snowpack conditions as of: March 1, 2006

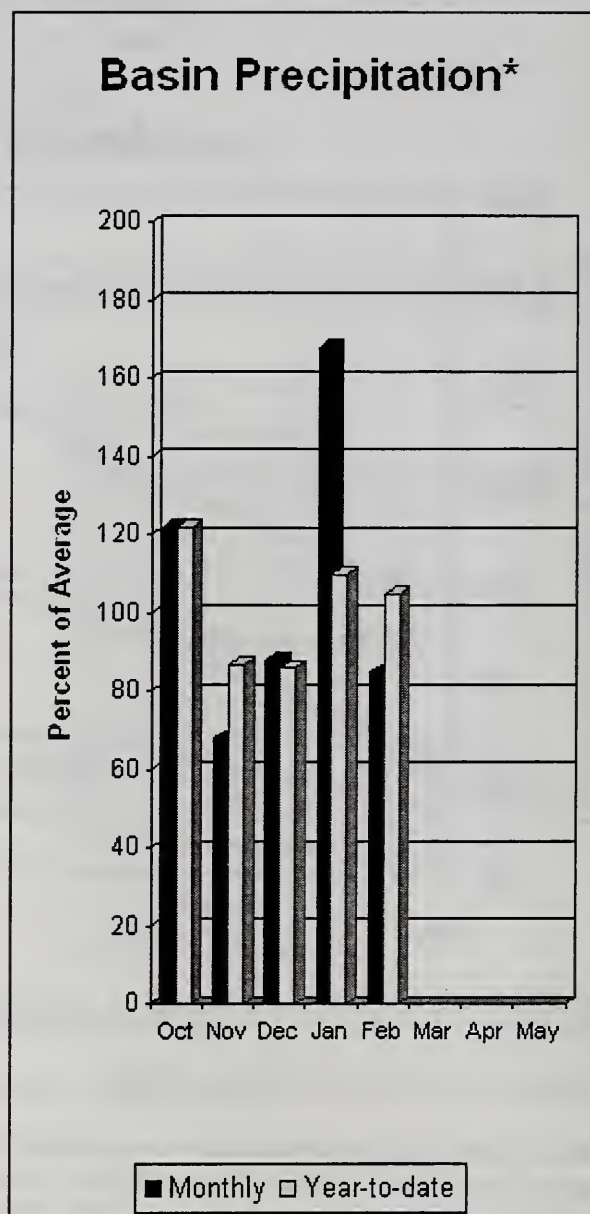
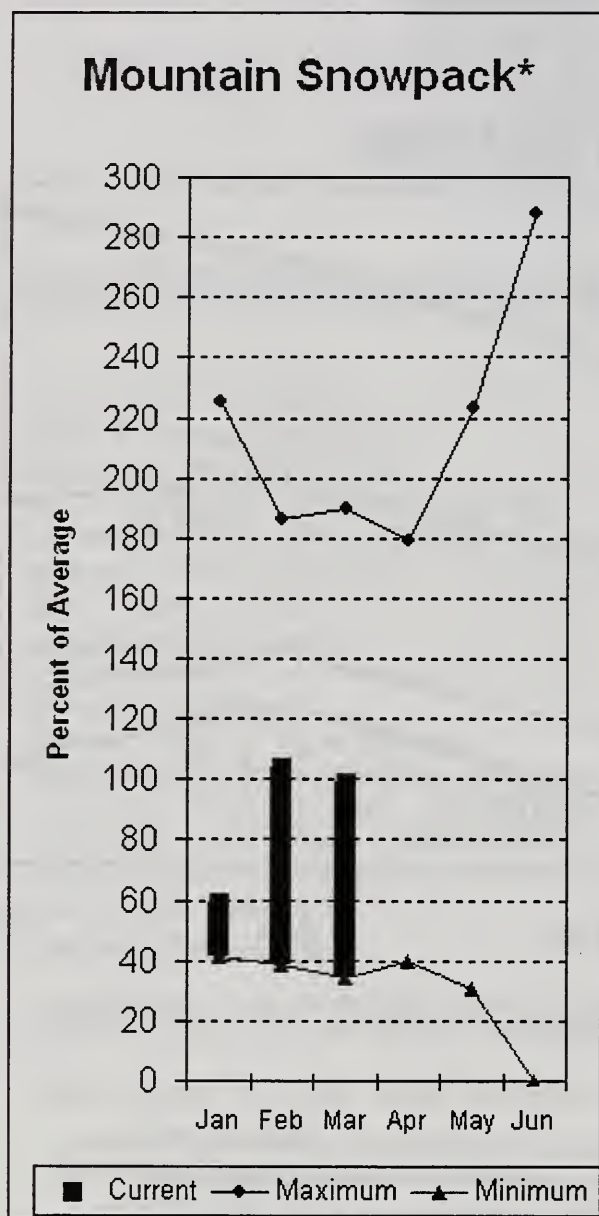
The Columbia Basin snowpack charts are produced with automated snow pillow data, collected by BC Hydro, Alberta Environment, and NRCS Snow Survey Program. These charts will now be available on the first of each month, January through May. Be aware that the data are provisional, until they are officially released by the responsible data collection agencies. As the official data are released, these charts will be updated.

February weather was dominated by much below normal precipitation over the Oregon and Washington Cascades, eastern Oregon and Washington, and the middle Snake River region. Because of this, the snowpack in these areas decreased significantly in terms of percent of average snow water content conditions. It is significant to note however, that the Canadian and Pend Oreille Basin snowpacks increased slightly.

The combined Columbia Basin snowpack above The Dalles is currently at 105 percent of average. This compares to 59 percent of average last year and 108 percent of average on February 1. The overall snowpack is at 89 percent of the average peak accumulation. This compares to 51 percent last year and 72 percent last month.

The snowpack in the Columbia Basin above Castlegar is at 98 percent of average. This compares to 69 percent last year and 97 percent of average last month. For the basin above Grand Coulee, the snowpack is at 100 percent of average (same as last month), compared to 64 percent last year. The Snake River snowpack above Ice Harbor is at 113 percent of average, compared to 56 percent last year and 123 percent of average last month.

# Spokane River Basin



\*Based on selected stations

The March 1 forecasts for summer runoff within the Spokane River Basin are 90% of average near Post Falls and 91% at Long Lake. The Chamokane River near Long Lake forecasted to have 103% of average flows for the May-August period. The forecast is based on a basin snowpack that is 99% of average and precipitation that is 105% of average for the water year. Precipitation for February was below normal at 85% of average. Streamflow on the Spokane River at Long Lake was 78% of average for February. March 1 storage in Coeur d'Alene Lake was 83,000 acre feet, 57% of average and 35% of capacity. Snowpack at Quartz Peak SNOTEL site was 118% of average with 23.1 inches of water content. Average temperatures in the Spokane basin were 2 degrees below normal for February and 1 degree above for the water year.

*For more information contact your local Natural Resources Conservation Service office.*



# Spokane River Basin

## SPOKANE RIVER BASIN Streamflow Forecasts - March 1, 2006

		<<===== Drier ===== Future Conditions ===== Wetter =====>>						
Forecast Point	Forecast Period	Chance Of Exceeding *						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
=====								
SPOKANE near Post Falls (2)	APR-SEP	1810	2160	2390	90	2620	2970	2650
	APR-JUL	1740	2070	2300	90	2530	2860	2550
SPOKANE at Long Lake (2)	APR-JUL	1930	2320	2580	91	2840	3230	2850
	APR-SEP	2110	2520	2800	91	3080	3490	3070
CHAMOKANE CREEK near Long Lake	MAY-AUG	6.6	8.9	10.5	103	12.1	14.4	10.2

## SPOKANE RIVER BASIN Reservoir Storage (1000 AF) - End of February

Reservoir	Usable Capacity	*** Usable Storage ***		
		This Year	Last Year	Avg
		Year	Year	
COEUR D'ALENE	238.5	83.3	72.3	144.9

## SPOKANE RIVER BASIN Watershed Snowpack Analysis - March 1, 2006

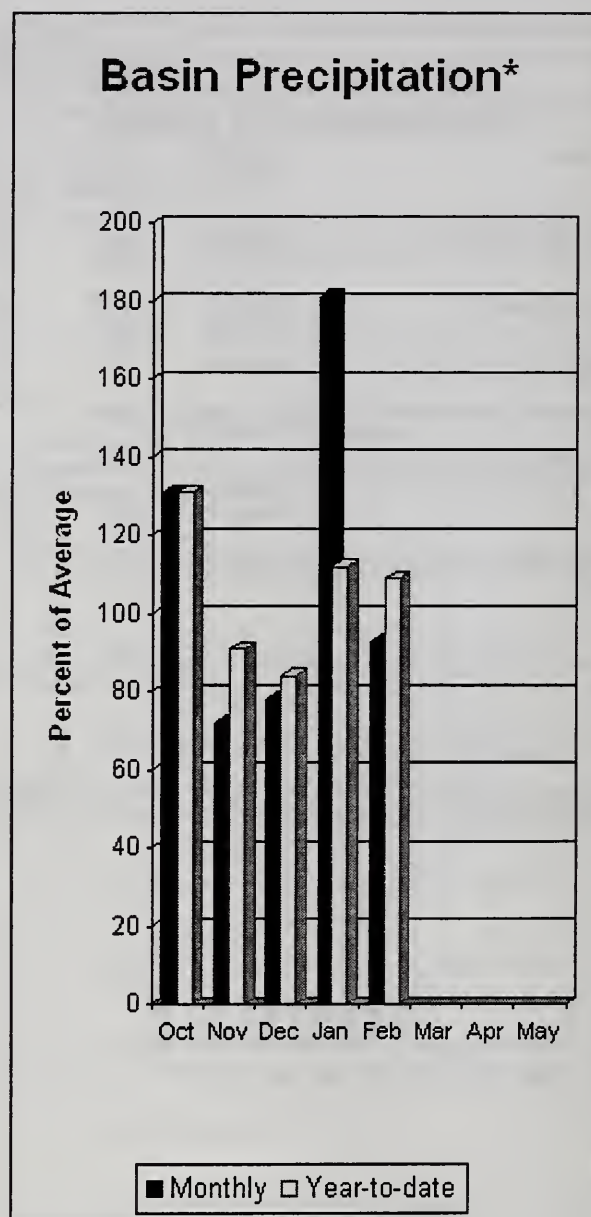
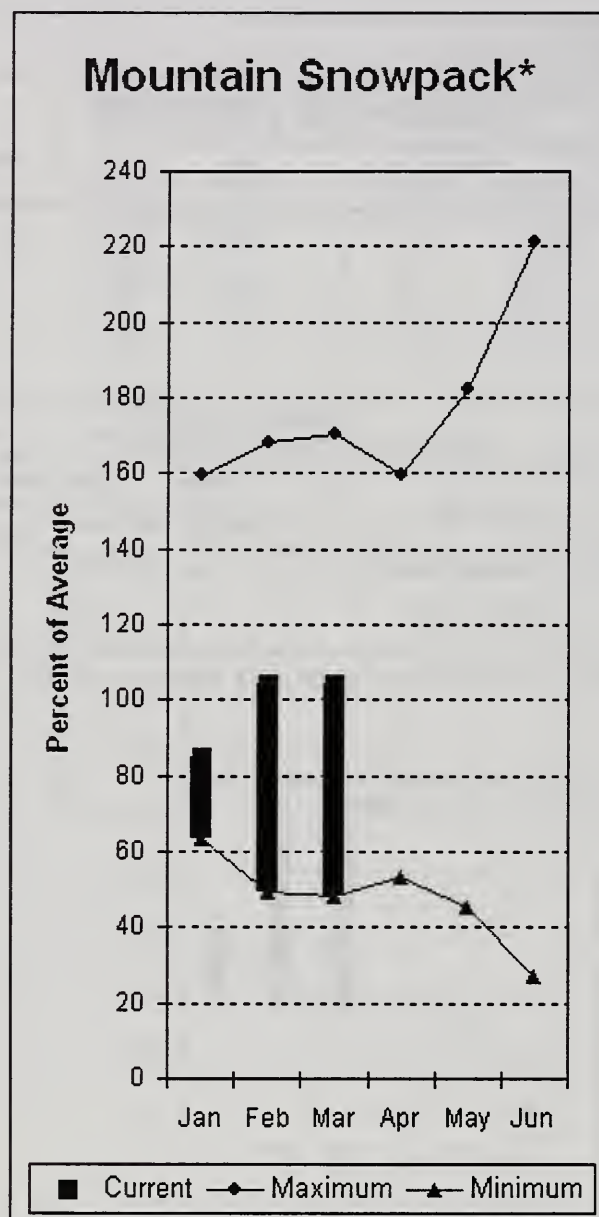
Watershed	Number of Data Sites	This Year as % of	
		Last Yr	Average
SPOKANE RIVER	16	306	99
NEWMAN LAKE	2	643	111

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

## Colville - Pend Oreille River Basins



\*Based on selected stations

The April – September average forecast for the Kettle River streamflow is 95%, Colville at Kettle Falls is 117% and Priest River near the town of Priest River is 101%. February streamflow was 92% of average on the Pend Oreille River, 93% on the Columbia at Birchbank and 96% on the Kettle River. March 1 snow cover was 104% of average in the Pend Oreille Basin River Basin. Bunchgrass Meadows SNOTEL site had 30.5 inches of snow water on the snow pillow. Normally Bunchgrass would have 24.4 inches on March 1. Precipitation during February was 93% of average, bringing the year-to-date precipitation to 109% of average. Reservoir storage in the basin, including Lake Pend Oreille and Priest Lake was 107% of normal. Average temperatures were 2 degrees below normal for February and 1 degree above for the water year.

*For more information contact your local Natural Resources Conservation Service office.*



# Colville - Pend Oreille River Basins

## Streamflow Forecasts - March 1, 2006

		<===== Drier ===== Future Conditions ===== Wetter =====>						
Forecast Point	Forecast Period	Chance Of Exceeding *						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
=====								
PEND OREILLE Lake Inflow (2)	APR-JUL	10530	11940	12900	102	13860	15270	12700
	APR-SEP	11500	13050	14100	101	15150	16700	13900
PRIEST near Priest River (1,2)	APR-JUL	685	780	825	101	870	965	815
	APR-SEP	650	810	880	101	950	1110	870
PEND OREILLE bl Box Canyon (2)	APR-JUL	11000	12250	13100	102	13950	15200	12900
	APR-SEP	11700	13250	14300	101	15350	16900	14100
COLVILLE at Kettle Falls	APR-SEP	127	150	165	117	180	203	141
	APR-JUL	115	136	150	117	164	185	128
KETTLE near Laurier	APR-SEP	1570	1750	1880	95	2010	2190	1970
	APR-JUL	1510	1680	1790	96	1900	2070	1870
COLUMBIA at Birchbank (1,2)	APR-JUL	28670	32129	33700	97	35270	38730	34900
	APR-SEP	35701	40033	42000	97	43970	48300	43500
COLUMBIA at Grand Coulee Dm (1,2)	APR-SEP	51243	58297	61500	96	64700	71760	64000
	APR-JUL	42900	48814	51500	96	54190	60100	53800

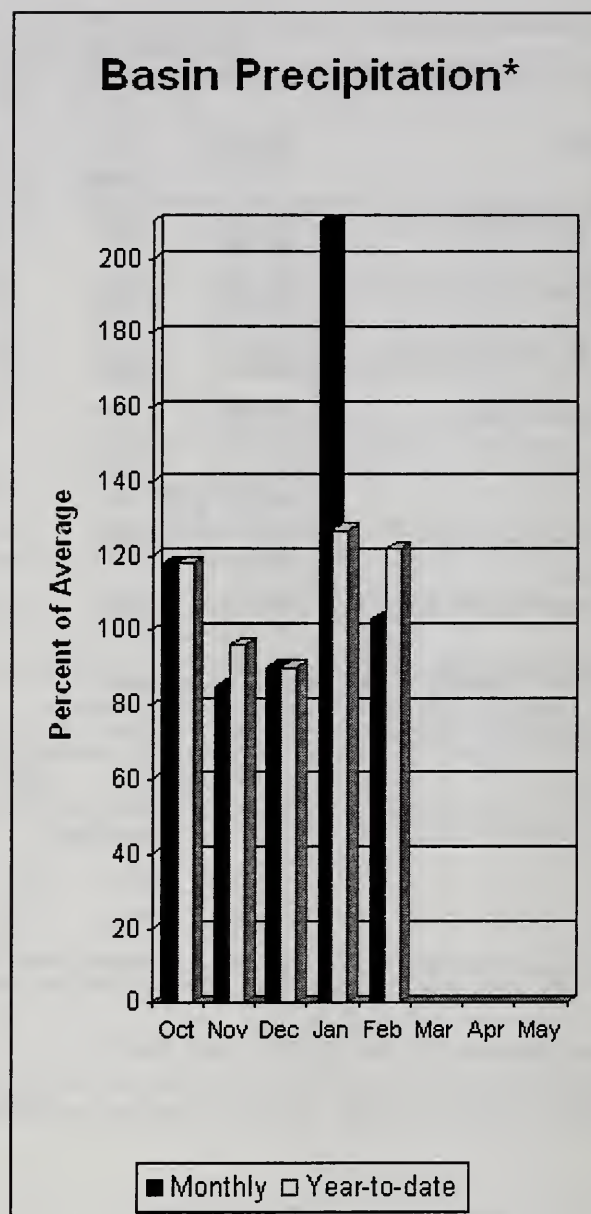
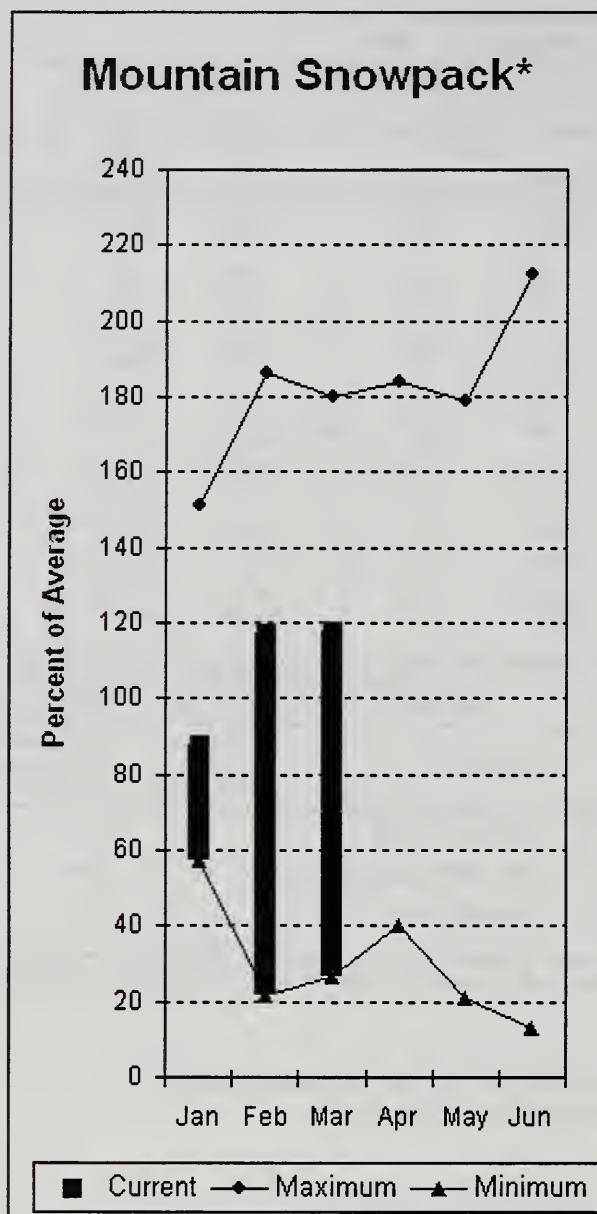
COLVILLE - PEND OREILLE RIVER BASINS Reservoir Storage (1000 AF) - End of February					COLVILLE - PEND OREILLE RIVER BASINS Watershed Snowpack Analysis - March 1, 2006			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ROOSEVELT		NO REPORT			COLVILLE RIVER	0	256	0
PEND OREILLE	1561.3	844.8	933.3	778.8	PEND OREILLE RIVER	11	236	104
PRIEST LAKE	119.3	50.4	55.0	56.8	KETTLE RIVER	7	138	110

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

# Okanogan - Methow River Basins



\*Based on selected stations

Summer runoff average forecast for the Okanogan River is 89%, Similkameen River is 92%, Methow River is 91% and Salmon Creek is 112%. March 1 snow cover on the Okanogan was 108% of average, Omak Creek was 154% and the Methow was 106%. February precipitation in the Okanogan-Methow was 103% of average, with precipitation for the water year at 122% of average. February streamflow for the Methow River was 77% of average, 95% for the Okanogan River and 74% for the Similkameen. Snow-water content at Salmon Meadows SNOTEL was 12.5 inches. Average for this site is 10.1 inches on March 1. Combined storage in the Conconully Reservoirs was 12,000-acre feet, which is 51% of capacity and 70% of the March 1 average. Temperatures were near normal for February and 2 degrees above for the water year.

*For more information contact your local Natural Resources Conservation Service office.*



# Okanogan - Methow River Basins

## Streamflow Forecasts - March 1, 2006

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
SIMILKAMEEN near Nighthawk (1)	APR-JUL	895	1130	1240	92	1350	1580	1350
	APR-SEP	930	1210	1330	92	1450	1730	1450
OKANOGAN near Tonasket (1)	APR-JUL	805	1220	1410	89	1600	2020	1580
	APR-SEP	970	1390	1580	89	1770	2190	1770
OKANOGAN at Malott (1)	APR-JUL	820	1250	1450	89	1650	2080	1635
	APR-SEP	1000	1430	1630	89	1830	2260	1826
Salmon Creek nr Conconully	APR-JUL	11.1	16.6	21	112	26	34	18.7
	APR-SEP	11.4	17.3	22	112	27	36	19.7
TOATS COULEE CREEK nr Loomis	APR-JUL	21	28	33	118	38	45	28
	APR-SEP	23	30	35	117	40	47	30
Beaver Creek blw SF nr Twisp	APR-SEP	9.0	11.9	13.8	114	15.7	18.4	12.1
	APR-JUL	8.1	10.9	12.8	115	14.7	17.5	11.1
METHOW RIVER near Pateros	APR-SEP	650	800	900	91	1000	1150	985
	APR-JUL	705	780	830	91	880	960	910

### OKANOGAN - METHOW RIVER BASINS Reservoir Storage (1000 AF) - End of February

### OKANOGAN - METHOW RIVER BASINS Watershed Snowpack Analysis - March 1, 2006

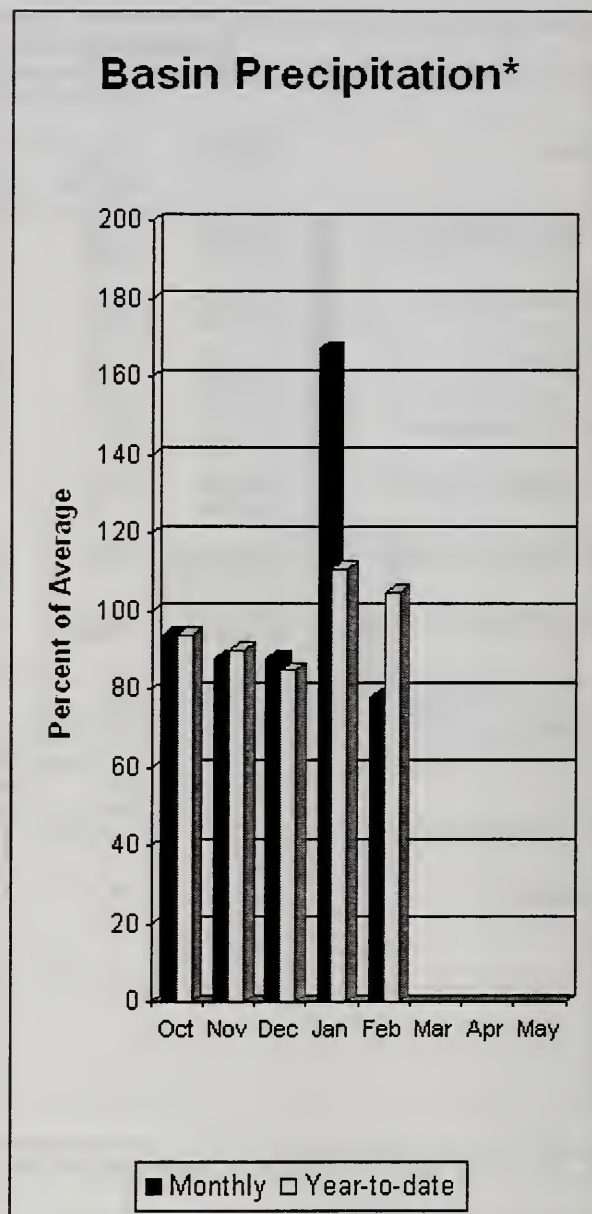
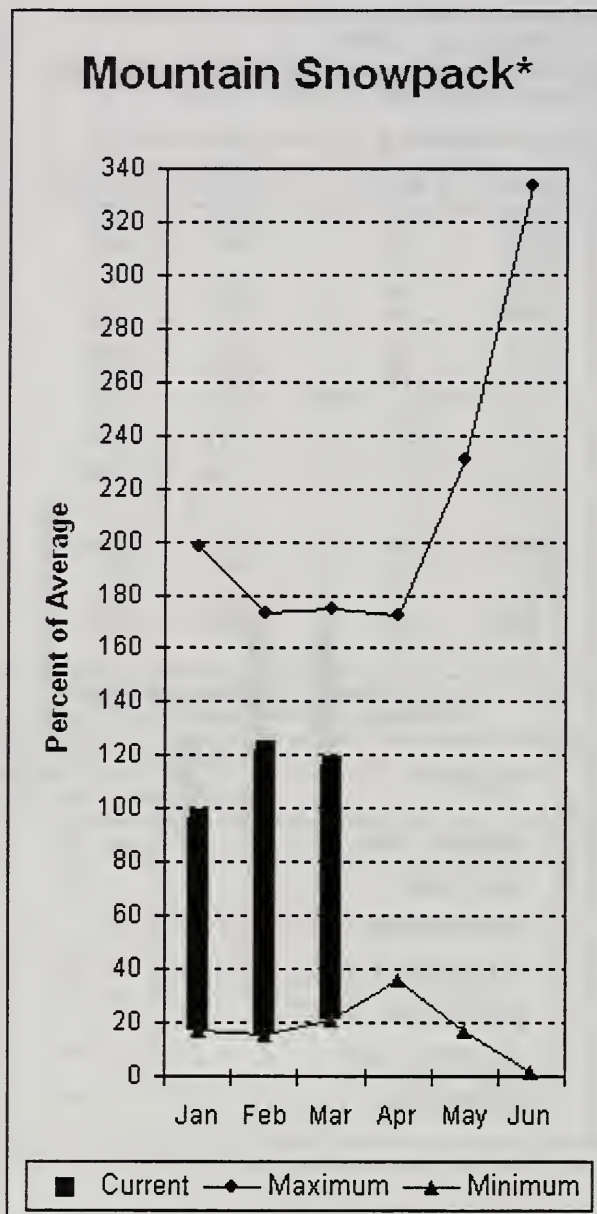
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
SALMON LAKE	10.5	7.5	6.2	8.4	OKANOGAN RIVER	22	181	108
CONCONULLY RESERVOIR	13.0	4.5	4.9	8.7	OMAK CREEK	1	493	154
					SANPOIL RIVER	0	0	0
					SIMILKAMEEN RIVER	4	194	79
					TOATS COULEE CREEK	1	175	124
					CONCONULLY LAKE	3	316	135
					METHOW RIVER	5	302	106

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

## Wenatchee - Chelan River Basins



\*Based on selected stations

Precipitation during February was 78% of average in the basin and 105% for the year-to-date. Runoff for Entiat River is forecast to be 100% of average for the summer. The March-September average forecast for Chelan River is 98%, Wenatchee River at Plain is 99%, Stehekin River is 99% and Stemilt Ck. Near Wenatchee is 123%. Icicle and Squilchuck creeks are expected to have near average flows as well. February average streamflows on the Chelan River were 85% and on the Wenatchee River 67%. March 1 snowpack in the Wenatchee River Basin was 110% of average; the Chelan, 103%; the Entiat, 109%; Stemilt Creek, 124% and Colockum Creek, 132%. Reservoir storage in Lake Chelan was 227,000-acre feet, 91% of March 1 average and 34% of capacity. Lyman Lake SNOTEL had the most snow water with 56 inches of water. This site would normally have 51 inches on March 1. Temperatures were near normal for February and 1 degree above for the water year.

*For more information contact your local Natural Resources Conservation Service office.*



# Wenatchee - Chelan River Basins

## Streamflow Forecasts - March 1, 2006

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						
		90%		Chance Of Exceeding *		30%		30-Yr Avg.
		(1000AF)	(1000AF)	(1000AF)	(% AVG.)	(1000AF)	(1000AF)	
CHELAN RIVER near Chelan	APR-SEP	1000	1090	1160	98	1230	1320	1190
	APR-JUL	880	960	1020	97	1080	1160	1050
STEHEKIN near STEHEKIN	APR-SEP	710	775	820	99	865	930	830
	APR-JUL	605	655	690	99	725	775	700
ENTIAT RIVER nr Ardenvoir	APR-SEP	206	225	240	100	255	275	240
	APR-JUL	189	207	220	102	235	250	215
WENATCHEE at Plain	APR-SEP	1030	1130	1190	99	1250	1350	1200
	APR-JUL	950	1020	1070	99	1120	1190	1080
WENATCHEE R. at Peshastin	APR-SEP	1209	1460	1630	99	1800	2050	1640
	APR-JUL	988	1275	1470	99	1665	1950	1480
STEMILT CK nr Wenatchee (miner's in)	MAY-SEP	125	152	170	123	188	215	138
ICICLE CREEK near Leavenworth	APR-SEP	290	310	325	94	340	360	345
	APR-JUL	270	285	300	94	315	330	320
COLUMBIA R. bl Rock Island Dam (2)	APR-SEP	59256	64701	68400	98	72100	77540	69500
	APR-JUL	48206	53978	57900	98	61820	67590	59000

### WENATCHEE - CHELAN RIVER BASINS Reservoir Storage (1000 AF) - End of February

### WENATCHEE - CHELAN RIVER BASINS Watershed Snowpack Analysis - March 1, 2006

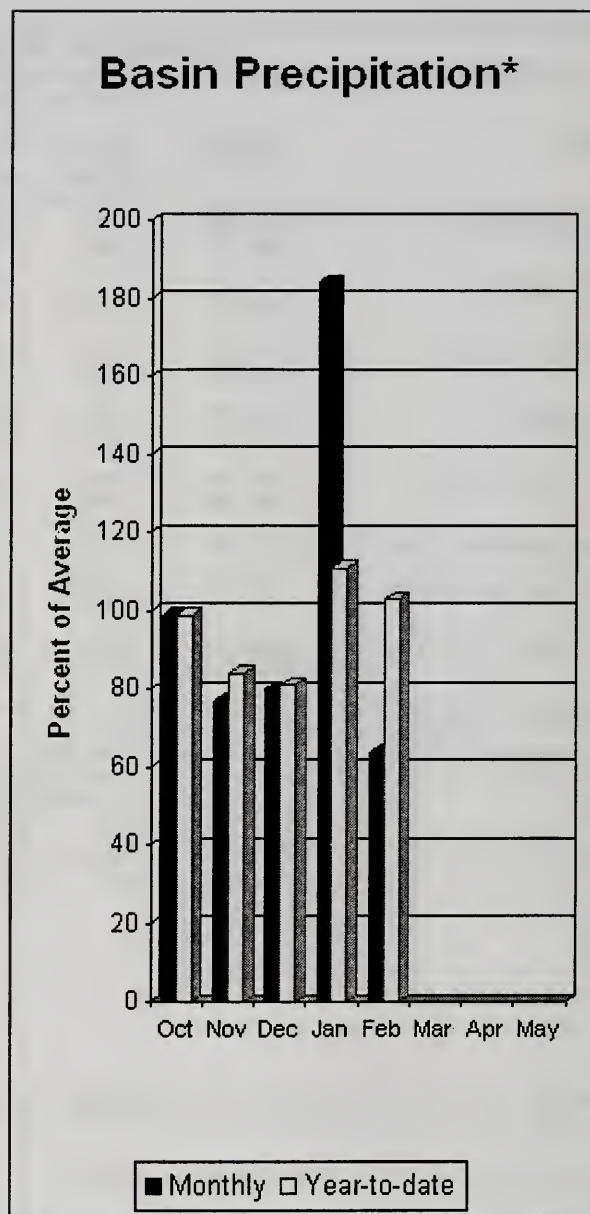
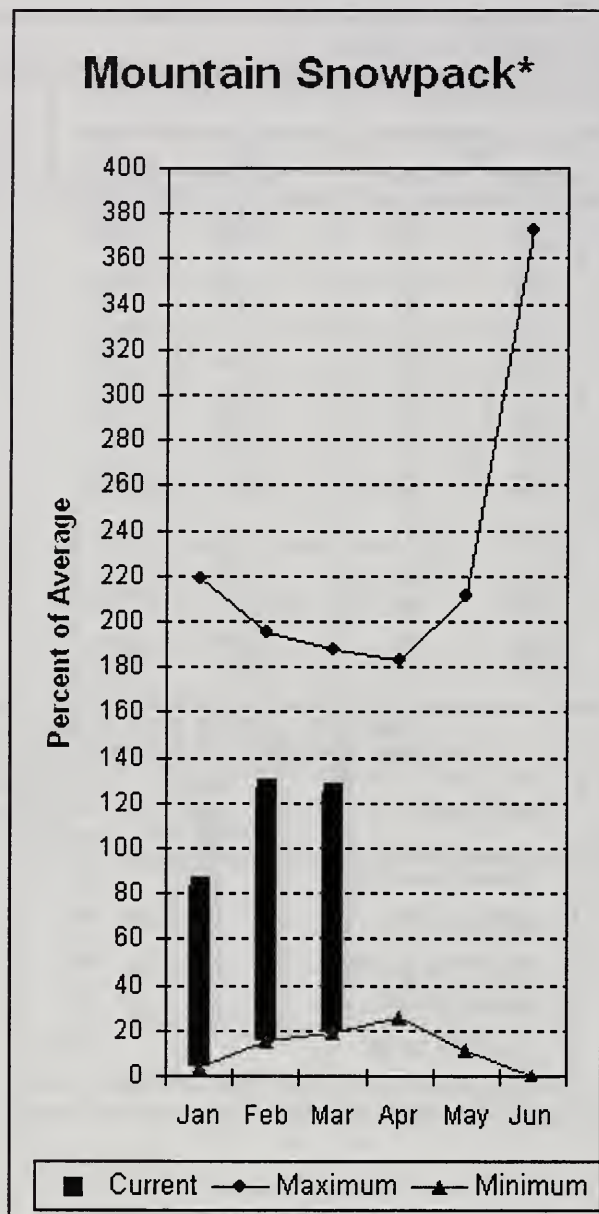
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
CHELAN LAKE	676.1	226.9	435.0	250.1	CHELAN LAKE BASIN	4	267	103
					ENTIAT RIVER	2	250	109
					WENATCHEE RIVER	12	381	110
					STEMILT CREEK	1	246	124
					COLOCKUM CREEK	1	2050	132

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.  
 (2) - The value is natural volume - actual volume may be affected by upstream water management.

# Upper Yakima River Basin



\*Based on selected stations

March 1 reservoir storage for the Upper Yakima reservoirs was 268,000-acre feet, 54% of average. Forecasts for the Yakima River at Cle Elum are 109% of average and the Teanaway River near Cle Elum is at 115%. Lake inflows are all forecasted to be near that same range this summer. February streamflows within the basin were Yakima near Cle Elum at 68% and Cle Elum River near Roslyn at 60%. March 1 snowpack was 125% based upon 10 snow course and SNOTEL readings within the Upper Yakima Basin. Precipitation was 64% of average for February and 103% year-to-date. Volume forecasts for the Yakima Basin are for natural flow. As such, they may differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow.

For more information contact your local Natural Resources Conservation Service office.



# Upper Yakima River Basin

## Streamflow Forecasts - March 1, 2006

		<<===== Drier ===== Future Conditions ===== Wetter =====>>						
Forecast Point	Forecast Period	Chance Of Exceeding *						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
KEECHELUS LAKE INFLOW	APR-JUL	112	124	132	109	140	152	121
	APR-SEP	121	135	145	109	155	169	133
KACHESS LAKE INFLOW	APR-JUL	102	113	121	109	129	140	111
	APR-SEP	110	122	130	108	138	150	120
CLE ELUM LAKE INFLOW	APR-JUL	405	430	445	109	460	485	410
	APR-SEP	440	470	490	109	510	540	450
YAKIMA at Cle Elum	APR-JUL	805	860	895	109	935	985	820
	APR-SEP	875	940	980	109	1020	1080	900
TEANAWAY near Cle Elum	APR-JUL	149	158	165	115	172	181	143
	APR-SEP	152	161	168	115	175	184	146

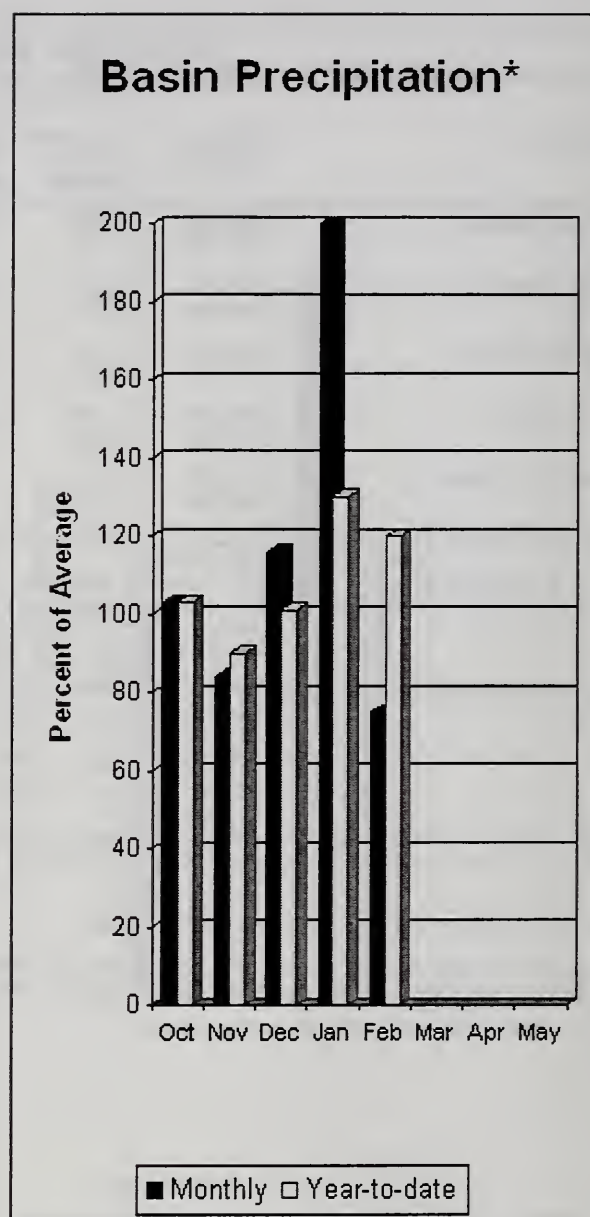
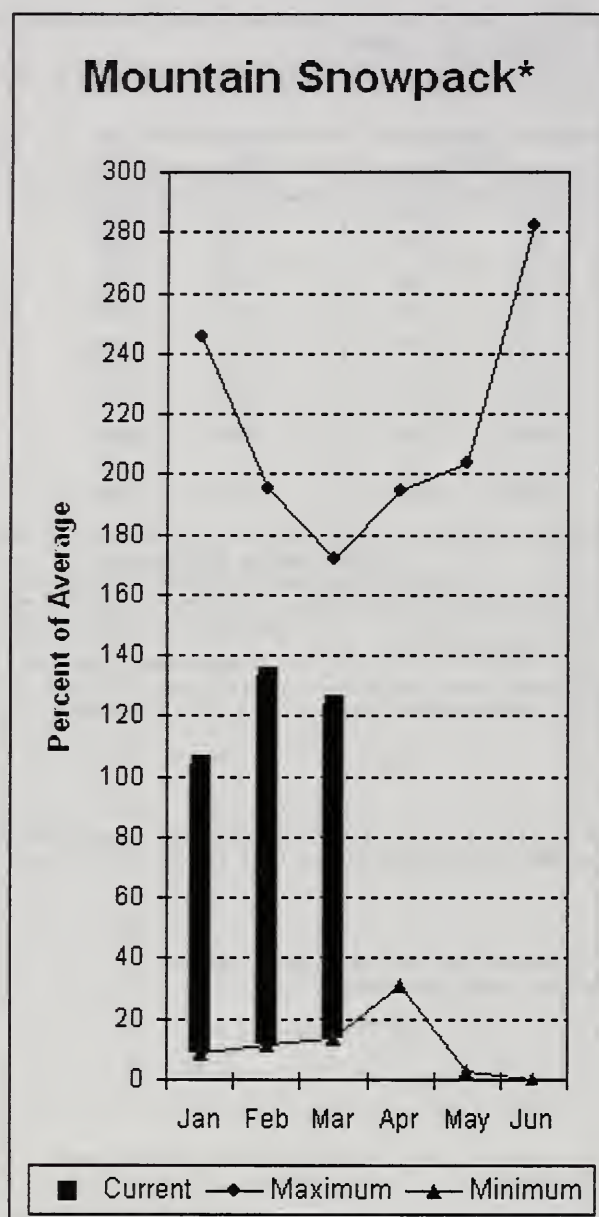
UPPER YAKIMA RIVER BASIN Reservoir Storage (1000 AF) - End of February					UPPER YAKIMA RIVER BASIN Watershed Snowpack Analysis - March 1, 2006			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
KEECHELUS	157.8	66.2	103.3	102.4	UPPER YAKIMA RIVER	10	656	125
KACHESS	239.0	85.1	130.5	154.7				
CLE ELUM	436.9	117.0	274.3	241.4				

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

# Lower Yakima River Basin



\*Based on selected stations

February average streamflows within the basin were: Yakima River near Parker, 72%; Naches River near Naches, 80%; and Yakima River at Kiona, 68%. March 1 reservoir storage for Bumping and Rimrock reservoirs was 141,000-acre feet, 102% of average. Forecast averages for Yakima River near Parker are 116%; American River near Nile, 110%; Ahtanum Creek, 113%; and Klickitat River near Glenwood, 106%. March 1 snowpack was 124% based upon 8 snow course and SNOTEL readings within the Lower Yakima Basin and Ahtanum Creek reported in at 122% of average. Precipitation was 75% of average for February and 120% year-to-date for water. Temperatures were 2 degrees below normal for February and near average for the water year. Volume forecasts for Yakima Basin are for natural flow. As such, they March differ from the U.S. Bureau of Reclamation's forecast for the total water supply available, which includes irrigation return flow.

For more information contact your local Natural Resources Conservation Service office.



# Lower Yakima River Basin

## Streamflow Forecasts - March 1, 2006

		<===== Drier ===== Future Conditions ===== Wetter =====>						
Forecast Point	Forecast Period	Chance Of Exceeding *						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
BUMPING LAKE INFLOW	APR-SEP	127	141	150	114	159	173	132
	APR-JUL	119	132	140	115	148	161	122
AMERICAN RIVER near Nile	APR-SEP	114	124	130	110	136	146	118
	APR-JUL	105	114	120	111	126	135	108
RIMROCK LAKE INFLOW	APR-SEP	230	250	265	110	280	300	240
	APR-JUL	200	215	225	110	235	250	205
NACHES near Naches	APR-SEP	810	880	930	111	980	1050	835
	APR-JUL	735	800	845	111	890	955	760
AHTANUM CREEK at Union Gap	APR-SEP	22	30	36	113	42	50	32
	APR-JUL	21	29	34	113	39	47	30
YAKIMA near Parker	APR-SEP	1950	2110	2220	116	2330	2490	1920
	APR-JUL	1770	1910	2000	116	2090	2230	1730
KLICKITAT near Glenwood	APR-JUN	114	127	135	105	143	156	129
	APR-SEP	143	160	172	106	184	201	163

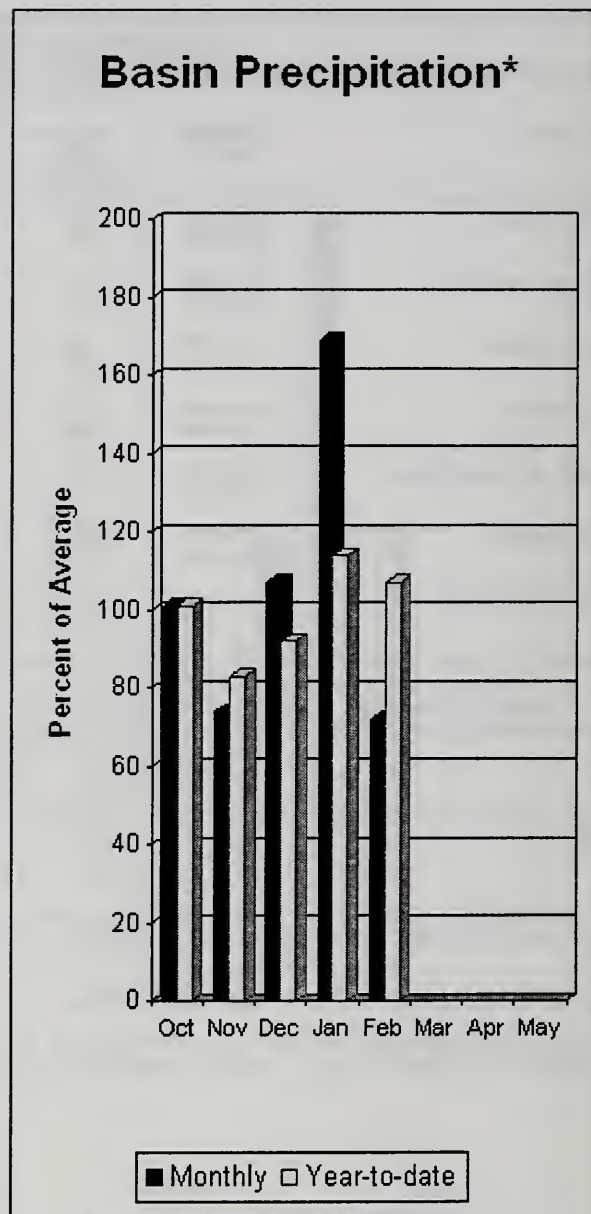
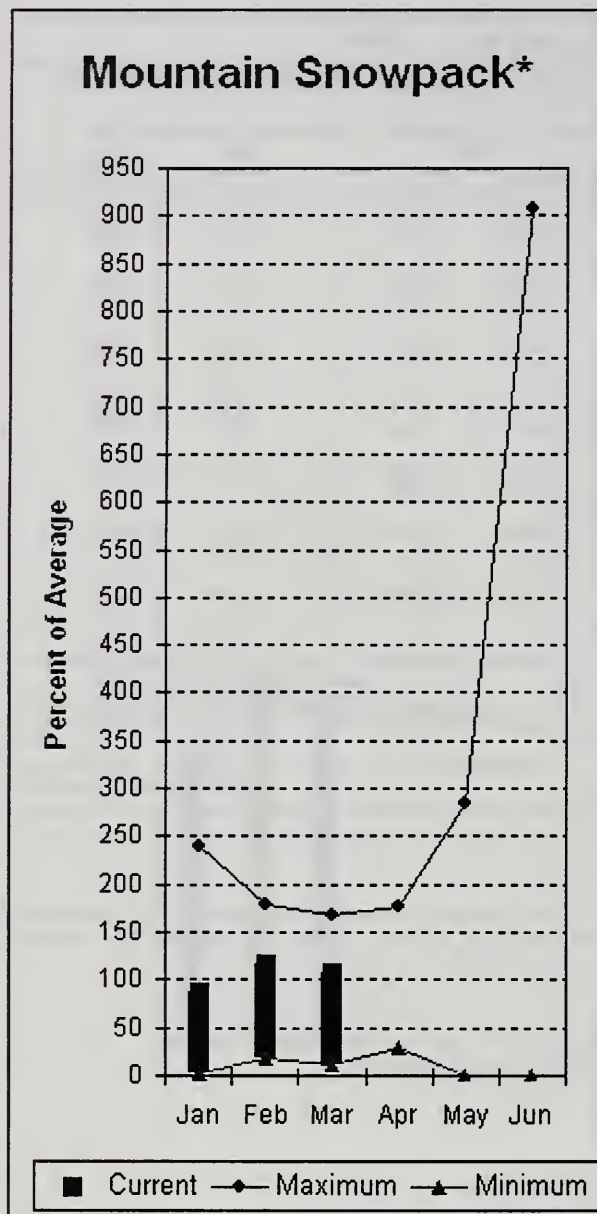
LOWER YAKIMA RIVER BASIN Reservoir Storage (1000 AF) - End of February					LOWER YAKIMA RIVER BASIN Watershed Snowpack Analysis - March 1, 2006			
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
BUMPING LAKE	33.7	22.6	27.7	11.5				
RIMROCK	198.0	118.2	153.7	126.1				

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

# Walla Walla River Basin



\*Based on selected stations

February precipitation was 72% of average, maintaining the year-to-date precipitation at 107% of average. Snowpack in the basin was 107% of average. Streamflow forecasts are 91% of average for Mill Creek and 108% for the SF Walla Walla near Milton-Freewater. February streamflow was 96% of average for the Walla Walla River. Average temperatures were 2 degrees below normal for February and 1 degree above average for the water year.

*For more information contact your local Natural Resources Conservation Service office.*



# Walla Walla River Basin

## Streamflow Forecasts - March 1, 2006

Forecast Point	Forecast Period	<===== Drier =====		Future Conditions		===== Wetter =====>		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	Chance Of Exceeding * (% AVG.)	30% (1000AF)	10% (1000AF)	
MILL CREEK at Walla Walla	APR-SEP	9.3	13.7	16.7	91	19.7	24	18.4
	APR-JUL	9.1	13.5	16.5	91	19.5	24	18.2
SF WALLA WALLA near Milton-Freewater	APR-JUL	49	55	59	109	63	69	54
	APR-SEP	61	67	72	108	77	83	67

### WALLA WALLA RIVER BASIN Reservoir Storage (1000 AF) - End of February

### WALLA WALLA RIVER BASIN Watershed Snowpack Analysis - March 1, 2006

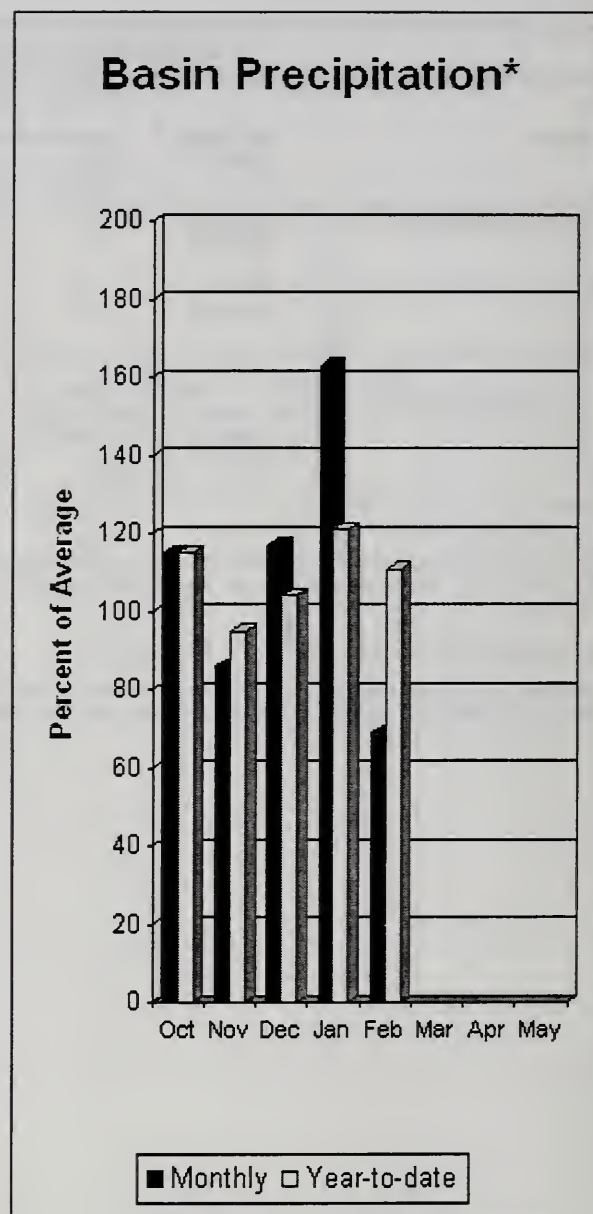
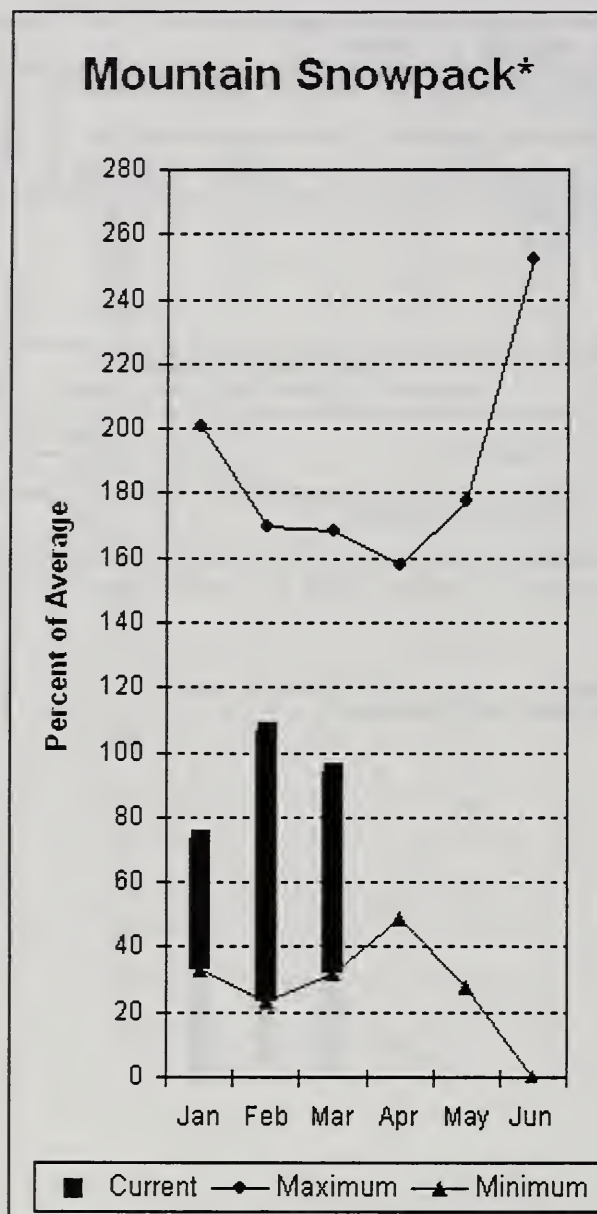
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					WALLA WALLA RIVER	2	390	107

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

# Lower Snake River Basin



\*Based on selected stations

The April - September forecast is for 104% for Clearwater River at Spalding. The Snake and Grande Ronde rivers can expect summer flows to be about 108% and 104% of normal respectively. February precipitation was 69% of average, bringing the year-to-date precipitation to 111% of average. March 1 snowpack readings averaged 94% of normal. February streamflow was 79% of average for Snake River below Lower Granite Dam and 60% for Grande Ronde River near Troy. Average temperatures were 1 degree below normal for February and 1 degree above normal for the water year.

*For more information contact your local Natural Resources Conservation Service office.*



# Lower Snake River Basin

## Streamflow Forecasts - March 1, 2006

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
GRANDE RONDE at Troy (1)	MAR-JUL	1190	1493	1630	103	1767	2070	1580
	APR-SEP	1021	1295	1420	104	1545	1820	1370
CLEARWATER at Spalding (1,2)	APR-JUL	5330	6980	7730	104	8480	10130	7430
	APR-SEP	5750	7400	8150	104	8900	10550	7850
SNAKE blw Lower Granite Dam (1,2)	APR-JUL	16130	21129	23400	108	25670	30670	21600
	APR-SEP	17931	23549	26100	108	28650	34270	24100

### LOWER SNAKE RIVER BASIN Reservoir Storage (1000 AF) - End of February

### LOWER SNAKE RIVER BASIN Watershed Snowpack Analysis - March 1, 2006

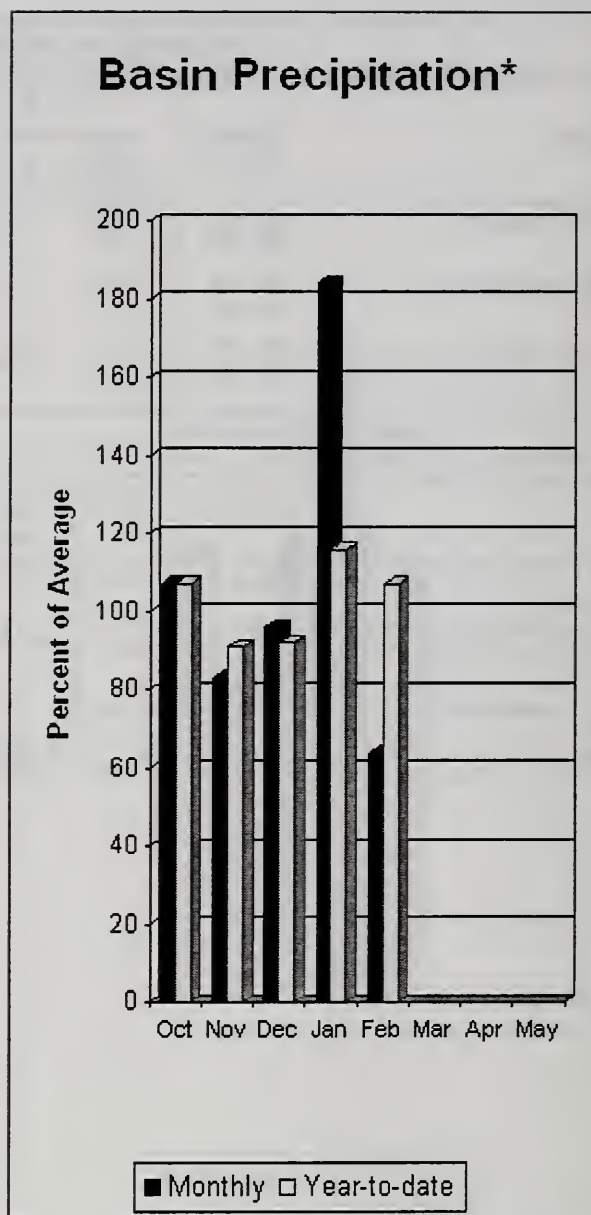
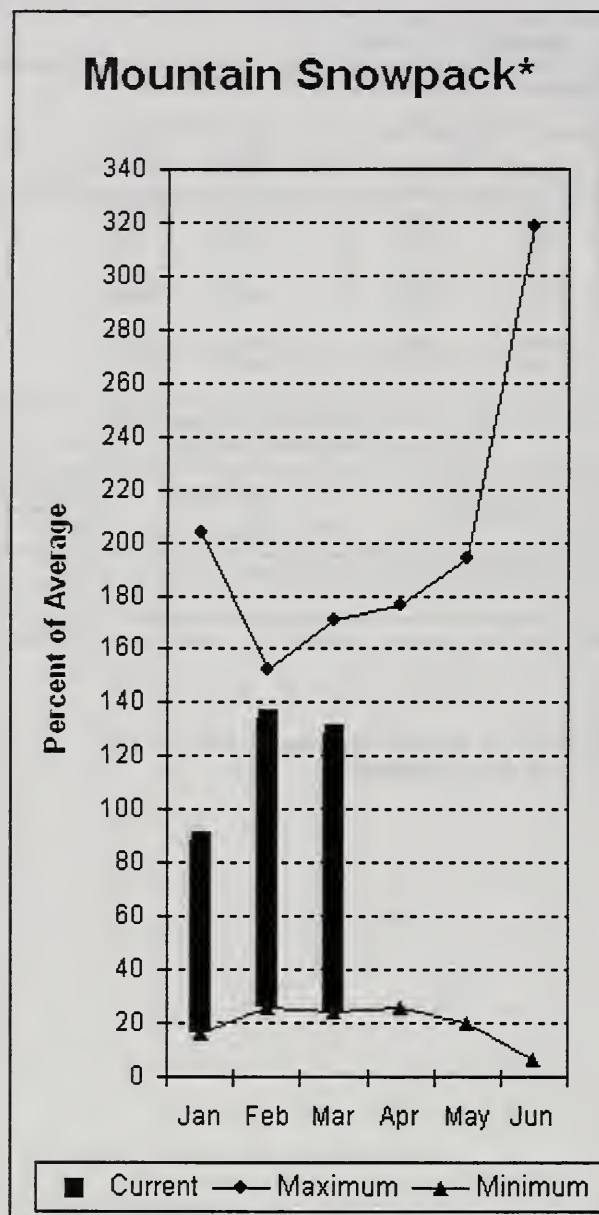
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
DWORSHAK	3468.0	2302.8	2870.3	2247.3	LOWER SNAKE, GRANDE RONDE	11	239	94

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

# Cowlitz - Lewis River Basins



\*Based on selected stations

Forecasts for April – September streamflows within the basin are Lewis River at Ariel, 106% and Cowlitz River at Castle Rock, 103% of average. The Columbia at The Dalles is forecasted to have 98% of average flows this summer. February average streamflow for Cowlitz River was 100% and 78% for Lewis River. The Columbia River at The Dalles was 85% of average. February precipitation was 64% of average and the water-year average was 107%. June Lake SNOTEL received 11.4 inches of precipitation in February, normal is 23.06 inches. March 1 snow cover for Cowlitz River was 117%, and Lewis River was 140% of average. Average temperatures were 1 degrees below normal during February and 2 degrees above for the water year.

For more information contact your local Natural Resources Conservation Service office.



# Cowlitz - Lewis River Basins

## Streamflow Forecasts - March 1, 2006

Forecast Point	Forecast Period	<===== Drier ===== Future Conditions ===== Wetter =====>						30-Yr Avg. (1000AF)
		Chance Of Exceeding *						
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
LEWIS at Ariel (2)	APR-JUL	806	975	1090	106	1205	1374	1031
	APR-SEP	959	1132	1250	106	1368	1541	1176
COWLITZ R. bl Mayfield Dam (2)	APR-SEP	1030	1602	1990	104	2378	2950	1922
	APR-JUL	794	1363	1750	104	2137	2706	1689
COWLITZ R. at Castle Rock (2)	APR-SEP	1382	2185	2730	103	3275	4078	2639
	APR-JUL	1556	2041	2370	103	2699	3184	2295
KLICKITAT near Glenwood	APR-JUN	114	127	135	105	143	156	129
	APR-SEP	143	160	172	106	184	201	163
COLUMBIA R. at The Dalles (2)	APR-SEP	83088	91193	96700	98	102210	110310	98600
	APR-JUL	67141	76405	82700	98	88990	98260	84600

### COWLITZ - LEWIS RIVER BASINS Reservoir Storage (1000 AF) - End of February

### COWLITZ - LEWIS RIVER BASINS Watershed Snowpack Analysis - March 1, 2006

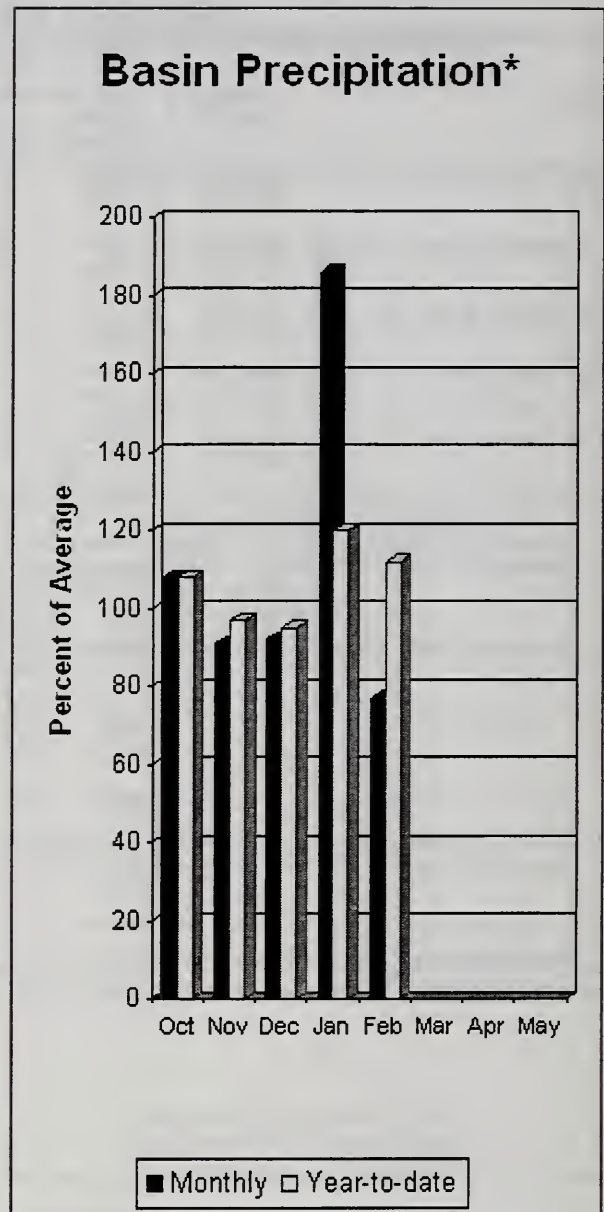
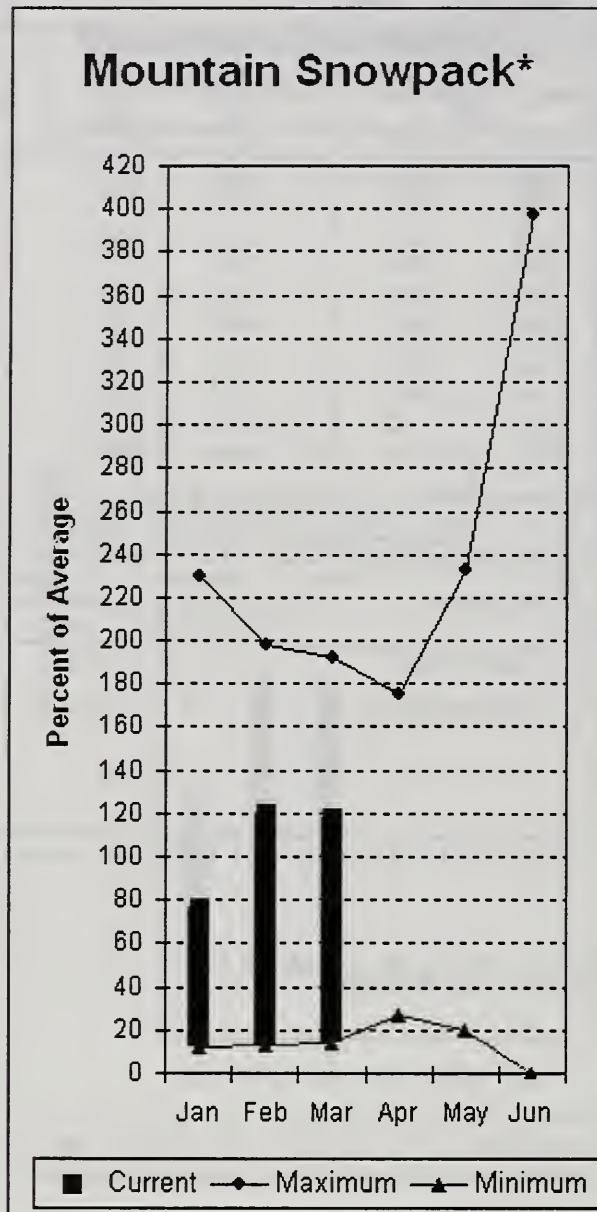
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
MOSSYROCK	0.0	1233.4	1240.0	---	LEWIS RIVER	4	619	140
SWIFT	0.0	618.6	640.0	---	COWLITZ RIVER	6	485	117
YALE	0.0	305.8	366.0	---				
MERWIN	0.0	403.4	399.2	---				

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

## White - Green River Basins



\*Based on selected stations

Summer runoff is forecast to be 106% of normal for the Green River below Howard Hanson Dam and 108% for the White River near Buckley. March 1 snowpack was 122% of average in both White River and Puyallup River basins and 114% in Green River Basin. Water content on March 1 at Corral Pass SNOTEL, at an elevation of 6,000 feet, was 33.7 inches. This site has a March 1 average of 29.5 inches. February precipitation was 77% of average, bringing the water year-to-date to 112% of average for the basins. Average temperatures in the area were 2 degrees below normal for February and 2 degrees above for the water-year.

*For more information contact your local Natural Resources Conservation Service office.*



# White - Green - Puyallup River Basins

## Streamflow Forecasts - March 1, 2006

Forecast Point	Forecast Period	<<===== Drier ===== Future Conditions ===== Wetter =====>>						30-Yr Avg. (1000AF)
		=====		Chance Of Exceeding *		=====		
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
WHITE near Buckley (1,2)	APR-JUL	383	446	475	108	504	567	440
	APR-SEP	465	541	575	108	609	685	534
GREEN R below Howard Hansen (1,2)	APR-JUL	185	237	260	107	283	335	243
	APR-SEP	210	262	285	106	308	360	268

### WHITE - GREEN - PUYALLUP RIVER BASINS Reservoir Storage (1000 AF) - End of February

### WHITE - GREEN - PUYALLUP RIVER BASINS Watershed Snowpack Analysis - March 1, 2006

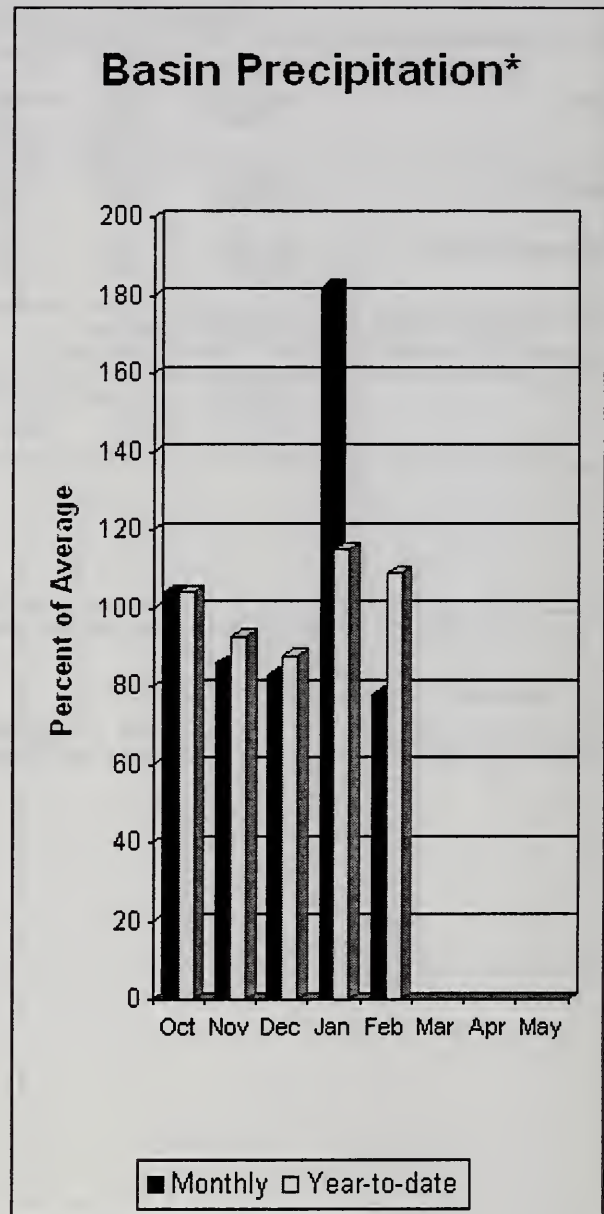
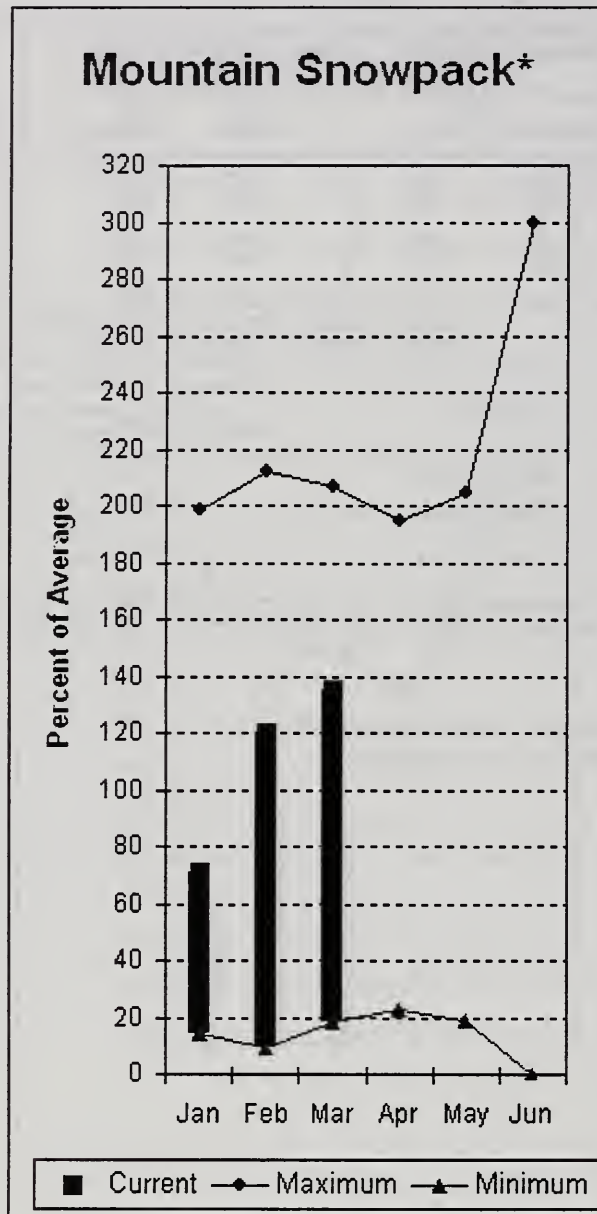
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					WHITE RIVER	3	470	122
					GREEN RIVER	7	2768	114
					PUYALLUP RIVER	3	479	122

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.  
 (2) - The value is natural volume - actual volume may be affected by upstream water management.

## Central Puget Sound River Basins



\*Based on selected stations

Forecast for spring and summer flows are: 115% for Cedar River near Cedar Falls; 118% for Rex River; 112% for South Fork of the Tolt River; and 121% for Cedar River at Cedar Falls. Basin-wide precipitation for February was 78% of average, bringing water-year-to-date to 109% of average. March 1 average snow cover in Cedar River Basin was 148%, Tolt River Basin was 140%, Snoqualmie River Basin was 132%, and Skykomish River Basin was 121%. Olallie Meadows SNOTEL site, at 3960 feet, had 59.4 inches of water content. Average March 1 water content is 48.9 inches at Olallie Meadows. Temperatures were near average for February and 2 degrees above normal for the water-year.

*For more information contact your local Natural Resources Conservation Service office.*



# Central Puget Sound River Basins

## Streamflow Forecasts - March 1, 2006

		<<===== Drier ===== Future Conditions ===== Wetter =====>>						
Forecast Point	Forecast Period	Chance Of Exceeding *						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
CEDAR near Cedar Falls	APR-JUL	66	77	84	115	91	102	73
	APR-SEP	73	84	92	115	100	111	80
REX near Cedar Falls	APR-JUL	22	27	30	120	33	38	25
	APR-SEP	24	29	33	118	37	42	28
CEDAR RIVER at Cedar Falls	APR-JUL	68	81	90	122	99	112	74
	APR-SEP	66	79	88	121	97	110	73
SOUTH FORK TOLT near Index	APR-JUL	13.4	15.0	16.0	109	17.0	18.6	14.7
	APR-SEP	15.7	17.7	19.0	112	20	22	16.9

### CENTRAL PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of February

### CENTRAL PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - March 1, 2006

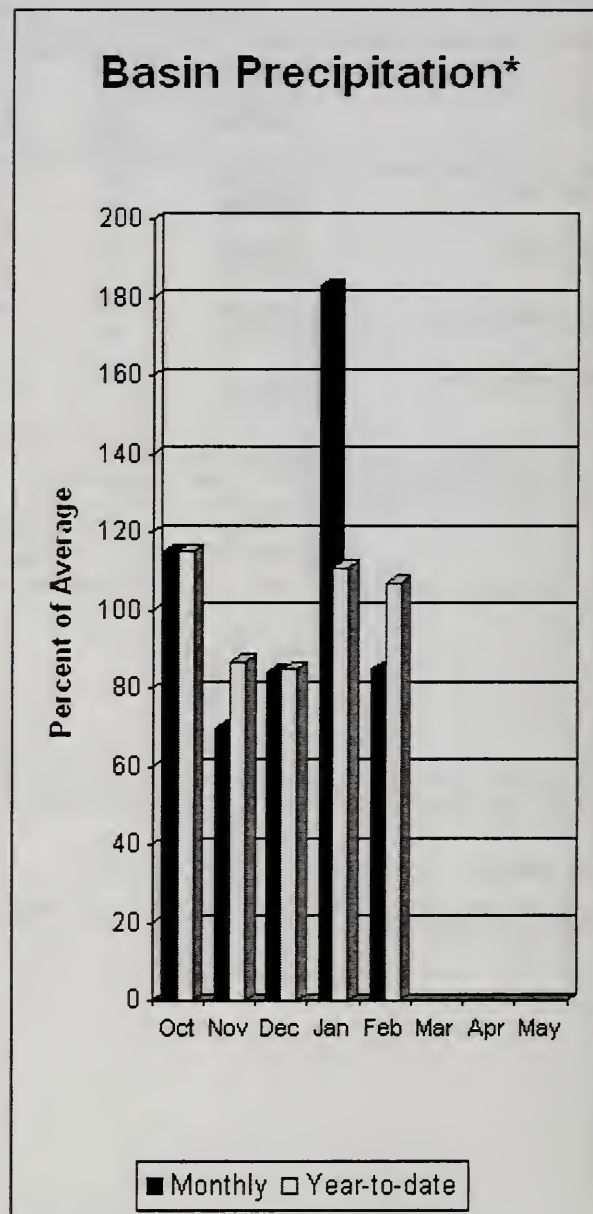
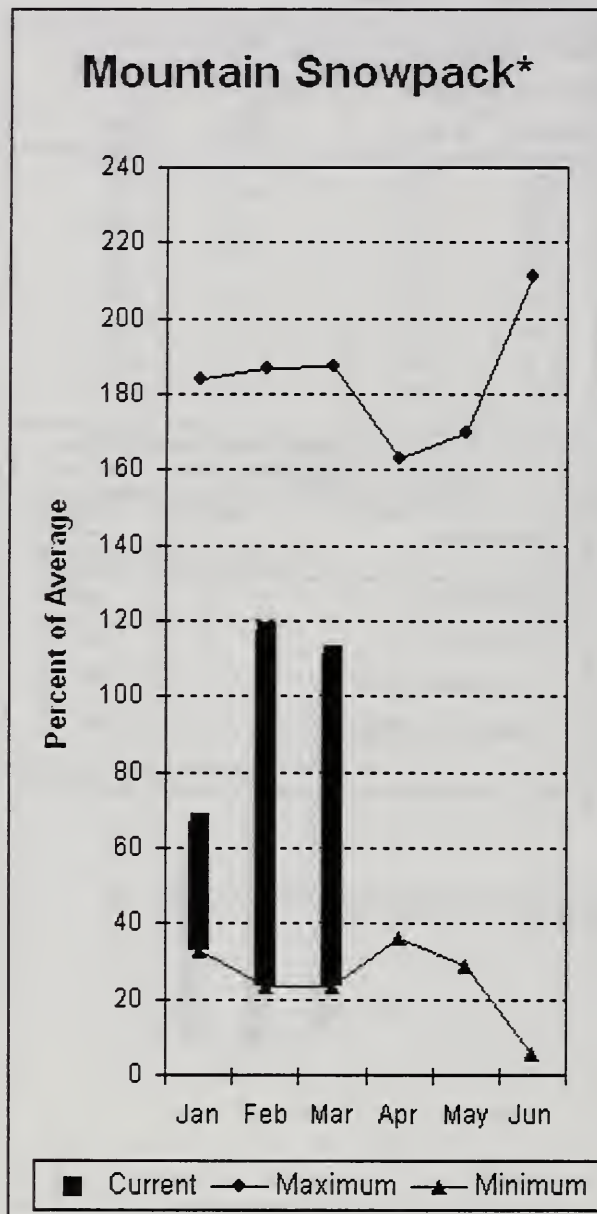
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					CEDAR RIVER	6	1946	148
					TOLT RIVER	3	530	140
					SNOQUALMIE RIVER	6	685	132
					SKYKOMISH RIVER	4	480	121

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.  
 (2) - The value is natural volume - actual volume may be affected by upstream water management.

# North Puget Sound River Basins



\*Based on selected stations

Forecast for Skagit River streamflow at Newhalem is 105% of average for the spring and summer period. February streamflow in Skagit River was 95% of average. Other forecast points included Baker River at 110% and Thunder Creek at 107% of average. Basin-wide precipitation for February was 85% of average, bringing water-year-to-date to 107% of average. March 1 average snow cover in Skagit River Basin was 100% and Nooksack River Basin was 117%. Baker River Basin snow surveys showed slightly above average conditions. Rainy Pass SNOTEL, at 4,780 feet, had 36.6 inches of water content. Average March 1 water content is 38.2 inches at Rainy Pass. March 1 Skagit River reservoir storage was 93% of average and 56% of capacity. Average temperatures for February were 1 degree below normal for the basin and 1 degree above average for the water year.

For more information contact your local Natural Resources Conservation Service office.



# North Puget Sound River Basins

## Streamflow Forecasts - March 1, 2006

		<===== Drier ===== Future Conditions ===== Wetter =====>						
Forecast Point	Forecast Period	Chance Of Exceeding *						30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
THUNDER CREEK near Newhalem	APR-JUL	224	239	250	107	261	276	234
	APR-SEP	325	343	355	107	367	385	333
SKAGIT at Newhalem (2)	APR-JUL	1735	1863	1950	105	2037	2165	1864
	APR-SEP	2084	2225	2320	105	2415	2556	2217
BAKER RIVER near Concrete	APR-JUL	805	879	930	112	981	1055	828
	APR-SEP	1003	1090	1150	110	1210	1297	1050

### NORTH PUGET SOUND RIVER BASINS Reservoir Storage (1000 AF) - End of February

### NORTH PUGET SOUND RIVER BASINS Watershed Snowpack Analysis - March 1, 2006

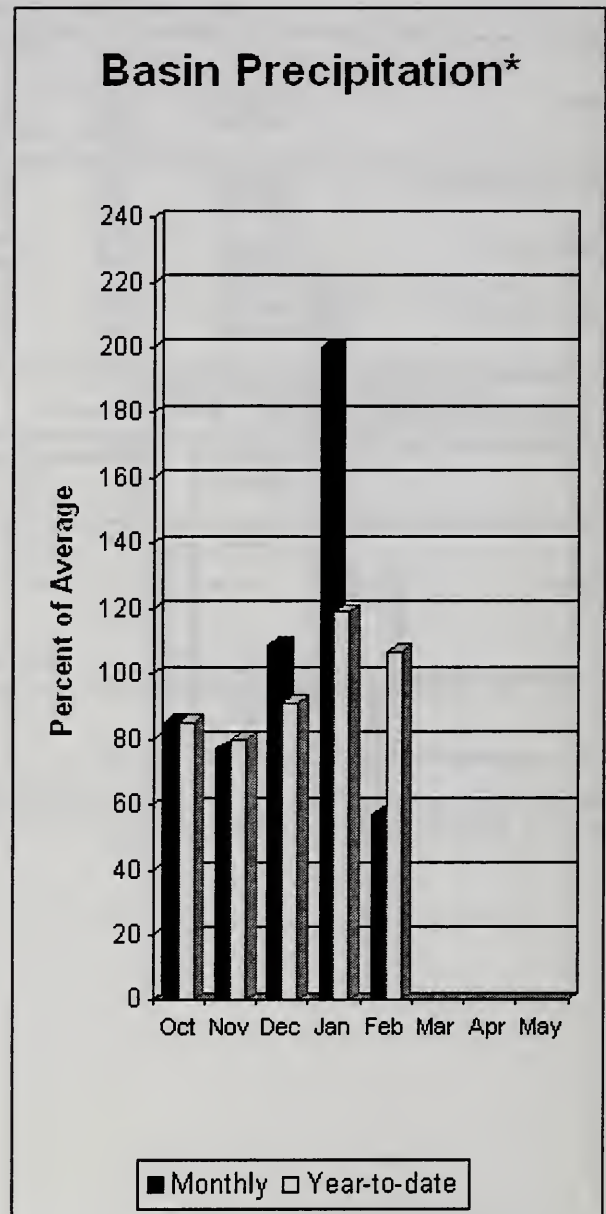
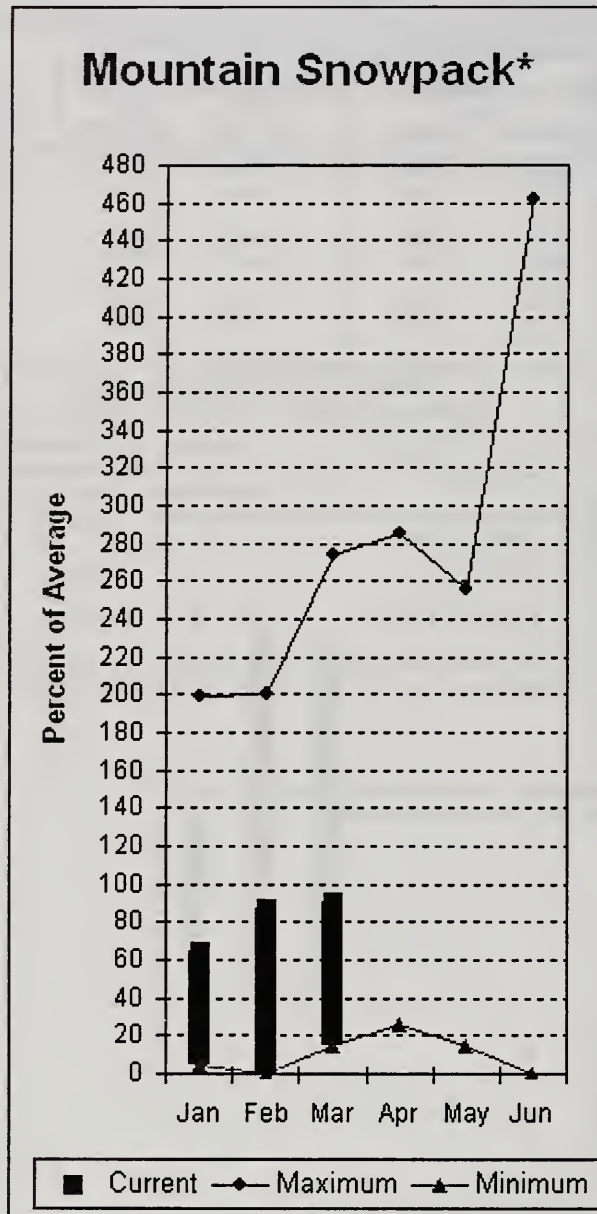
Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
ROSS	1404.1	750.4	1115.5	818.3	SKAGIT RIVER	13	410	100
DIABLO RESERVOIR	90.6	86.4	87.6	85.7	BAKER RIVER	3	557	117
					NOOKSACK RIVER	2	495	117

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

# Olympic Peninsula River Basins



\*Based on selected stations

Forecasted average runoff for streamflow for both the Dungeness and Elwha rivers is 100%. February runoff in the Dungeness River was 105% of normal. Big Quilcene and Wynoochee rivers should expect near average runoff this summer also. February precipitation was the lowest in the state at only 57% of average. Precipitation has accumulated at 107% of average for the water year. February precipitation at Quillayute was 6.37 inches. The thirty-year average for February is 12.35 inches. Olympic Peninsula snowpack averaged 79% of normal for the Hurricane Ridge area but 103% on the east side at Mt. Crag SNOTEL. Temperatures were near average for February and 2 degrees above average for the water year.

*For more information contact your local Natural Resources Conservation Service office.*



# Olympic Peninsula River Basins

## Streamflow Forecasts - March 1, 2006

Forecast Point	Forecast Period	<===== Drier ===== Future Conditions ===== Wetter =====>						
		=====		Chance Of Exceeding *		=====		30-Yr Avg. (1000AF)
		90% (1000AF)	70% (1000AF)	50% (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	
DUNGENESS near Sequim	APR-SEP	135	145	152	100	159	169	152
	APR-JUL	111	119	124	100	129	137	124
ELWHA near Port Angeles	APR-SEP	434	476	505	100	534	576	503
	APR-JUL	366	398	420	100	442	474	419

### OLYMPIC PENINSULA RIVER BASINS Reservoir Storage (1000 AF) - End of February

### OLYMPIC PENINSULA RIVER BASINS Watershed Snowpack Analysis - March 1, 2006

Reservoir	Usable Capacity	*** Usable Storage ***			Watershed	Number of Data Sites	This Year as % of	
		This Year	Last Year	Avg			Last Yr	Average
					OLYMPIC PENINSULA	4	676	91

\* 90%, 70%, 50%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.



The following text is extremely faint and illegible. It appears to be a paragraph of text, possibly a description or a list of items, located in the lower half of the page.



*Issued by*

**Bruce Knight**  
Chief  
Natural Resources Conservation Service  
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*Released by*

**R.L. "Gus" Highbanks**  
State Conservationist  
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Spokane, Washington

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## The Following Organizations Cooperate with the Natural Resources Conservation Service in Snow Survey Work\*:

<b>Canada</b>	Ministry of Sustainable Resources Snow Survey, River Forecast Centre, Victoria, British Columbia
<b>State</b>	Washington State Department of Ecology Washington State Department of Natural Resources
<b>Federal</b>	Department of the Army Corps of Engineers U.S. Department of Agriculture Forest Service U.S. Department of Commerce NOAA, National Weather Service U.S. Department of Interior Bonneville Power Administration Bureau of Reclamation Geological Survey National Park Service Bureau of Indian Affairs
<b>Local</b>	City of Tacoma City of Seattle Chelan County P.U.D. Pacific Power and Light Company Puget Sound Power and Light Company Washington Water Power Company Snohomish County P.U.D. Colville Confederated Tribes Spokane County Yakama Indian Nation Whatcom County Pierce County
<b>Private</b>	Okanogan Irrigation District Wenatchee Heights Irrigation District Newman Lake Homeowners Association Whitestone Reclamation District

\*Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.



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# Washington Water Supply Outlook Report

Natural Resources Conservation Service  
Spokane, WA

